

# MANUFACTURERS' RECORD

A Weekly Southern Industrial and Hardware Newspaper.

Vol. 9. No. 13.  
WEEKLY.

BALTIMORE, MAY 8, 1886.

\$3.00 A YEAR.  
SINGLE COPIES, 10 CENTS.

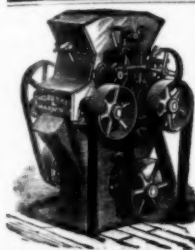
Sole Manufacturers of  
**EUREKA PACKING**

Steam, Hydraulic and Locomotive Packing,  
OF EVERY DESCRIPTION.  
Send for Prices.

**JAS. SMITH & CO.**

Works, 413 to 421 Race St., Cor. of Crown.  
Office & Store, 137 Market St., Philadelphia.

Dealers in  
**MANUFACTURERS', MILL and ENGINEERS' SUPPLIES**  
OF EVERY DESCRIPTION.  
CIRCULARS AND PRICE-LISTS MAILED UPON APPLICATION.



## Milling Outfits for Flour and Meal.

WE MAKE ROLLS AND PORTABLE MILLS COMPLETE.

Manufactory Established in 1851.

Pamphlets with Prices Mailed Free.

**NORDYKE & MARMON CO., INDIANAPOLIS, IND.**



## ELEVATORS

Send for Illustrated Circulars.

MORSE ELEVATOR WORKS.

**MORSE, WILLIAMS & CO.**

Manufacturers and Builders of HYDRAULIC STEAM, BELT and Hand-Power, PASSENGER and FREIGHT ELEVATORS

Office: 411 CHERRY STREET.

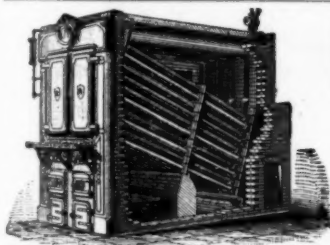
Works: FRANKFORD AVE., WILDEY & SHACKANAXON STS.

Branch Office, 163 Liberty Street, NEW YORK.

Successors to CLEM & MORSE  
With most approved Safety Devices.  
Dumb-Waiters, Automatic Hatch-Doors, &c.  
PHILADELPHIA, PA.

**NOTICE TO**  
**Engineers, \* Contractors,**  
**— MINING MEN, —**  
**AND OTHERS INTERESTED IN**  
**Tunneling, Shaft-Sinking, Etc.**

**Engineers' Tables of Progress**  
With Maps, Illustrations, and Full Description of the  
**New Croton Aqueduct Tunnel**  
**NEW YORK:** Size 16x16 feet; length 36 miles.  
Third Edition now Ready. Sent free on Application.  
**INGERSOLL ROCK DRILL CO., 10 Park Place, New York.**



## ROOT'S NEW WATER TUBE STEAM BOILER,

Safe, Economical, Durable.

Abendroth & Root Manufacturing Co.

28 CLIFF STREET, - - - NEW YORK.

SELLING AGENTS:

**DANIEL KELLY,**  
51 North Seventh St.,  
PHILADELPHIA, PA.

**A. S. FISKE,**  
48 Johnston Building,  
CINCINNATI, O.



## THE MEDART PATENT WROUGHT \* RIM \* PULLEY.

OVER 300,000 NOW IN USE. THE LIGHTEST, STRONGEST, BEST BALANCED and CHEAPEST in the WORLD.

Whole Pulleys from 9 inches to 120 inches diameter. Split Pulleys from 12 inches to 120 inches diameter. All widths of face up to 36 inches, crowning or straight, with single, double or triple sets of arms. Also Tight and Loose Pulleys. Absolute satisfaction guaranteed.

SHAFTING, HANGERS, COUPLINGS, &c.

MEDART PATENT PULLEY CO.,

1206 TO 1214 N. MAIN STREET, ST. LOUIS, MO.  
Stores: 99 to 101 W. Second St., Cincinnati. 24 & 26 S. Canal St., Chicago.

J. A. J. SHULTZ, President.

B. C. ALVORD, Secretary.

## SHULTZ BELTING COMPANY, ST. LOUIS, MO.

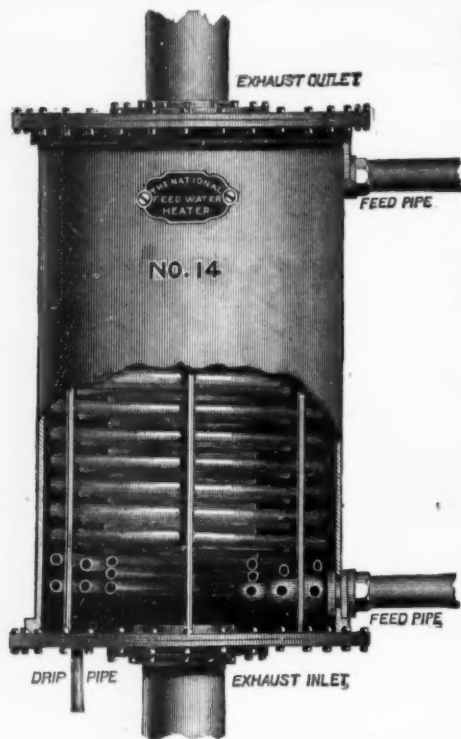
Manufacturers of Shultz Patent Fulled Leather Belting, Lace and Picker Leather.

OUR BELTING is made of Leather, tanned on the surfaces only; the interior (which is the fibre and strength of the hide) is not tanned, but Rawhide fulled and softened by our patent process. Our belting is more pliable, and hugs the pulley better and transmits more power than any other Belt. It does not pull out at the laceholes or rivets. It stretches less than any other Belt. It works equally well for the largest Driving Belts or for the fastest running machinery and smallest pulleys. OUR LACE LEATHER is made of Rawhide, by our patent process, without any tanning and is stronger and will wear better than any other. WE ALSO MAKE THE BEST PICKER LEATHER and BELT GREASE IN THE COUNTRY. Satisfaction guaranteed.

Southern Agents—FRED. N. OGDEN, New Orleans, La.

J. H. COFFIN & CO., Memphis, Tenn.

J. L. LINDSAY, Richmond, Va.



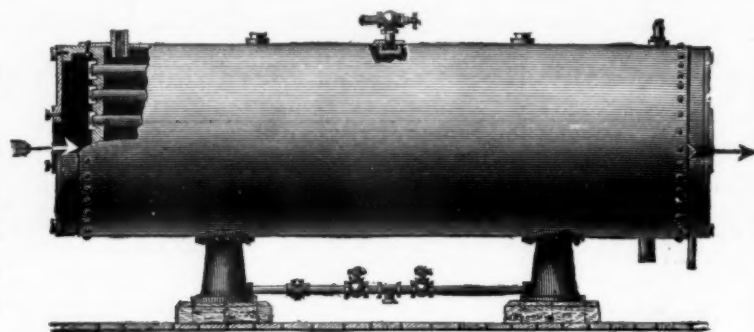
NATIONAL FEED-WATER HEATER, 400 H. P. succeeds where others fail, and that can be dismantled without removing the shell. It is full of merit generally, and is fortunately the **LOWEST IN PRICE** for a given capacity. For prices and detailed information, including Feed Pumps, send for our "Heater Circular."

## THE NATIONAL FEED WATER HEATER

Is a plain common-sense Heater, being simply one or more coils of seamless-drawn brass tubes in a steam chamber. We guarantee it to heat to  $210^{\circ}$ . Not its least merit is the fact that, being made by special machinery, it is sold at a **LOWER PRICE** than any other, not excepting the worthless "pot heaters."

## THE Morse Purifier

Is not merely some other purifier laid down on its side, but is the only one that we have been able to find that is designed on correct principles. It is a Purifier that



THE MORSE FEED-WATER PURIFIER.

## WESTINGHOUSE, CHURCH, KERR & CO.,

Contracting and Consulting Engineers,

17 Cortland St., New York, and 98 Fourth Ave., Pittsburgh, Pa.

CONTROLLING

The Westinghouse Electric Co's System.  
The National Feed Water Heater.

The Westinghouse Automatic Engine.  
The Morse Feed-Water Purifier.

The Reynolds-Corliss Engine.  
The Smith Fans and Ventilators.

Single Sheet Steel Boilers.  
The American Paper Pulley, &c.

ONE ESTIMATE.

ONE PROFIT.

ONE RESPONSIBILITY.

## Wiswell Ore Pulverizer and Amalgamator Combined.

The cost of this Mill is much less than any other machine of sufficient capacity to do the same amount of work.

It requires less power to run it, (10-horse being sufficient.)

The wear and tear of the Mill is much less than any other Quartz Mill doing the same amount of work, and the quality of the work done by it is greatly superior to work done in any other Quartz Mill now in use.

It crushes to a uniform fineness and makes no slimes, so that no sizing is required for concentration.

The Mill is equally well adapted to crushing and pulverizing of all classes of ores, either for amalgamation or concentration, and will pulverize and amalgamate from one-half to one ton per hour, according to character of ore and fineness of screens.

With ordinary care there is no loss of mercury by flouing, and consequent loss of gold, as in most other Mills where mercury is used in the Mill.

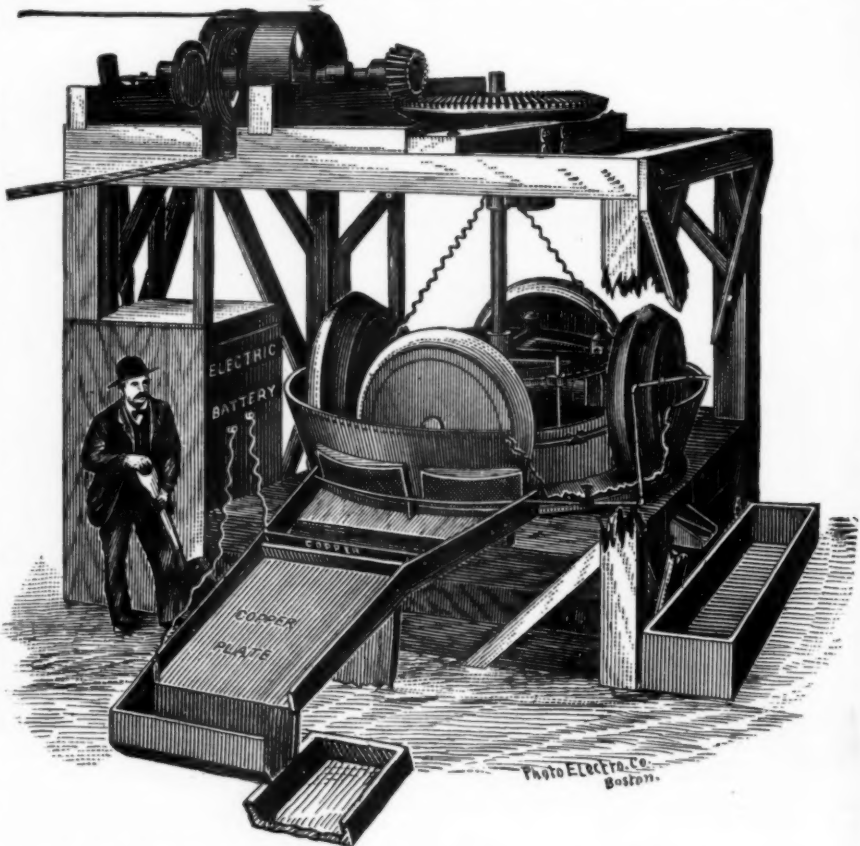
Amalgamation is carried on in the same operation with the crushing. The mercury is placed in the Mill in quantities varying from 10 to 40 pounds.

The application of electricity to the Mill for the purpose of cleaning and keeping the mercury alive has been to a very large extent superseded by the invention and introduction of the Mercury Trap in the Mill for the purpose of drawing off the mercury when charged with gold or on the slightest indication of flouing. By this ingenious device the mercury can be changed as often as desired without loss of time in either crushing or amalgamating. By opening this Trap the amalgam is discharged from the Mill in three minutes, and clean mercury introduced in its place.

To those familiar with running a Gold Mill this latter advantage will be greatly appreciated; in fact, it gives the mill-man full control of his work.

This Mill has been on exhibition at the foundry of Messrs. Bisbee & Endicott, at Chelsea, Mass., for the past 18 months, a good part of the time in active operation, and we have treated the most rebellious ores from many mining districts with most satisfactory results to the parties concerned.

The past year we have sold many Mills, which may be found in Michigan, North Carolina, Dakota, Montana, Idaho, Colorado, California, Mexico, Nova Scotia, etc. All those in operation are giving the most perfect satisfaction, as testimony will prove, and we will take pleasure in referring to any one of these on application.



We Furnish a Complete Mill for **\$2,500**, Delivered on Board Cars.

**WISWELL ELECTRIC MINING MACHINERY COMPY,**

A. A. REEVE, Treasurer,

4 POST-OFFICE SQUARE, BOSTON.



# AMERICAN SUPPLY COMPANY,

Formerly Myron Fish & Co., of Valley Falls, R. I., and Kendrick Loom Harness Co., of Providence, R. I.

—MANUFACTURERS OF—

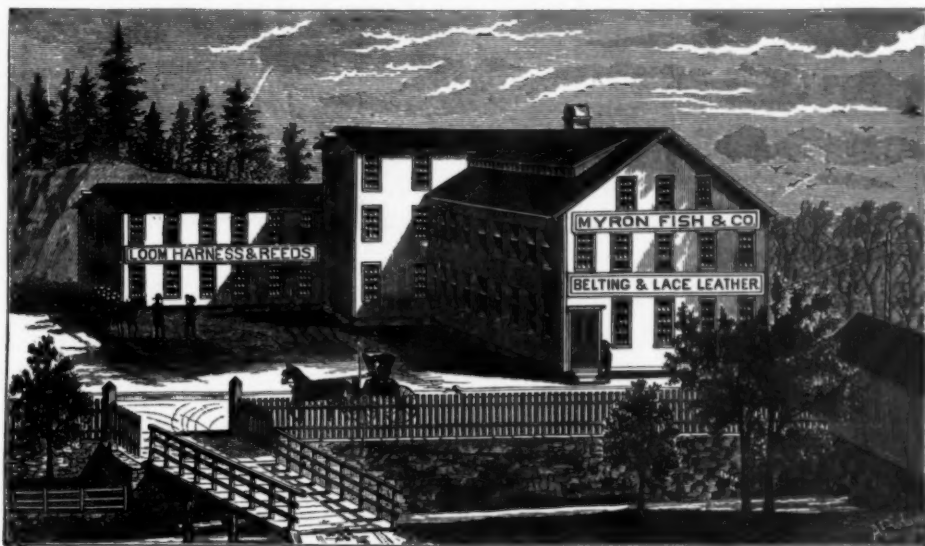
## LOOM HARNESS AND REEDS,

Oak Belting, Lace and Picker Leather, and Dealers in Supplies for Cotton, Woolen and Silk Mills.

Agents for Joseph Noone's Sons'  
**Roller, Slasher & Clearing Cloths.**

—Agents for—  
**RODDICK'S PATENT IMPROVED OIL CANS.**

Calf, Sheep and Lamb Roller Skins, and Roll Covers' Tools.



**WE HAVE**  
Unequalled Facilities for Furnishing  
**Shuttles & Heddle Frames,**  
**WIRE HEDDLES and WIRE GOODS**  
Of all Descriptions.

—Special Notice to Worsted and Silk Mills.—

We Manufacture both Worsted and Cotton Machine-Knit Mail Harness for Weaving Fine Worsted and Silk Goods. Also a Full Line of Supplies for Jacquard Looms.

Office and Salesrooms, 10 Exchange Place, Providence, R. I. —FACTORIES:— PROVIDENCE and VALLEY FALLS, R. I.

A. D. LOCKWOOD, Pres. JOHN KENDRICK, Vice-Pres. MYRON FISH, Treas. JOHN A. CARTER, Sec. JOSEPH H. KENDRICK, Gen'l Agent.

# GOODELL & WATERS,

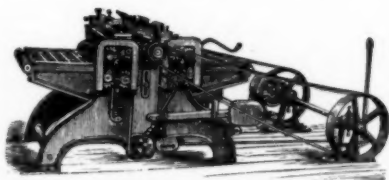
3002 Chestnut St., PHILADELPHIA.

11 and 13 S. Canal St., CHICAGO.

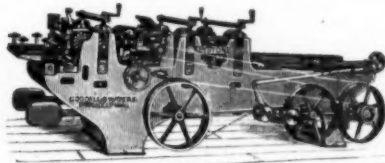
22 Warren St., NEW YORK.

—MANUFACTURERS OF—

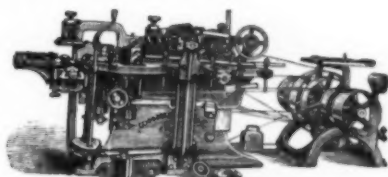
## IMPROVED WOOD-WORKING MACHINERY.



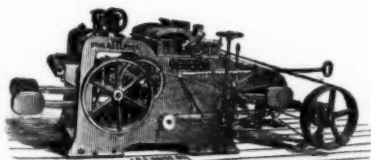
No. 2 Single Surfer.



Keystone Flooring Machine,  
Surfacing 100 lineal feet per minute.

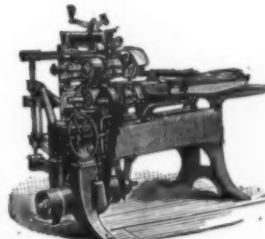


9-inch Moulder.

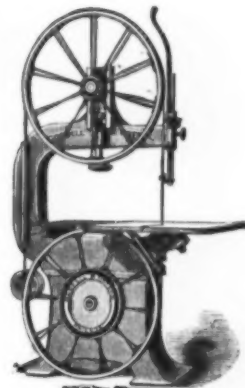


The "Philadelphia" Endless Bed D. S.

## "KEYSTONE" FLOORING MACHINE,



Modern Tenoning Machine.



42-inch Band Saw.

Of which over **TWO HUNDRED** have been sold during the past Two Years.

—SEND FOR CATALOGUE, AND MENTION THIS PAPER.—

Every Machine is thoroughly  
tested before leaving  
the Works.

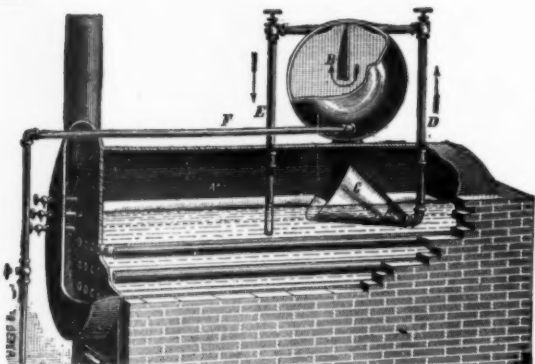
**GOODELL & WATERS,** 3002 CHESTNUT ST.,  
Philadelphia, Penn.

All our machines are war-  
ranted as represented.

**FIRE****The Hotchkiss Mechanical Boiler Cleaner****STEAM**

Removes from Steam Boilers, Lime, Oil, Magnesia, and all other impurities of Boiler Water, and prevents Scaling, Foaming and Burning; but the object of this advertisement is to warn you against an INFRINGER named H. ESTELLE and his agents, who have been selling without patent or

license from me, Boiler Cleaners, as shown by the cut on right hand side below. I take this method of informing the public in order that they may not further be deceived, as on August 4, 1885, a patent issued to H. ESTELLE for what he claims, as given in full with cut on right hand side below the cut, showing the HOTCHKISS CLEANER complete, except the shape of the Skimmer, which is an equivalent for my Funnel Skimmer.



The Hotchkiss Mechanical Boiler Cleaner.

CLAIM 1. The method of collecting impurities from the water-level of steam boilers, raised thereto by ebullition, by carrying them beneath said level and upward into a reservoir with an ascending current induced by the displacement of a cooler body of water in said reservoir, and depositing the impurities therein by precipitation, substantially as specified.

CLAIM 5. A bell-mouth or device having an enlarged receiving area for gathering the sediment, and suspended within the boiler by means of a pipe extending into the same from the upper shell thereof, the said bell-mouth and pipe constituting the induction channel for the upward current, carrying the sediment, combined with a reservoir and a return-pipe leading from the same to the boiler water, the whole forming a means of circulation for the boiler water, and for removing impurities therefrom, substantially as herein set forth.

You will observe that my claims cover a METHOD of removing impurities from the water of steam boilers, together with an apparatus for producing that effect, which, since the grant of the original patent have, without warrant, been extensively used and sold by certain imitators of my invention. All parties making, using or vending the apparatus in question, or any apparatus substantially the same in principle and mode of operation, together with all parties using the METHOD claimed, regardless of the construction of the apparatus employed, are **Hereby Notified** that they are infringing my said letters-patent 1877 1883; and that a full accounting for moneys derived from such infringement will be required, and that my rights will be enforced, if necessary, by legal measures.

For Further particulars and FREE illustrated 88-page Book, address,

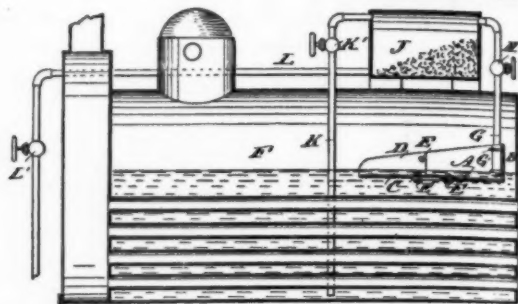
**JAS. I. HOTCHKISS,**

93 JOHN STREET,

NEW YORK.

“How to Keep  
**BOILERS**

**CLEAN”**



[Cut and Claim Copied from Patent.]

Having thus described my invention, WHAT I CLAIM AS NEW, and desire to secure by Letters Patent, is—

1. The combination, with the settling-drum J, of the pipe G and the skimmer A, provided with an extension-plate, extended laterally, as shown, at its front edge, substantially as herein shown and described.

2. The Combination, with the settling-drum J, of the pipe G, the skimmer A at the lower end of the same, which skimmer has a flange, B, and the extension plate C, held by bolts on the front edge of the skimmer, and having end flanges, substantially as herein shown and described.

HENRY ESTELLE.

**WATER****SCALE**

**Wood Split Pulleys.**  
**MILBURN**  
**Gin & Machine Co.**

MEMPHIS, TENN., U. S. A.

MANUFACTURERS OF

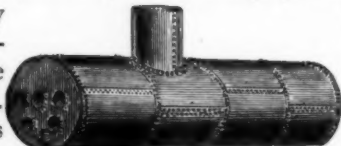
**STEAM ENGINES, BOILERS,**

(Made by the Tweedle system of hydraulic riveting),

**Cotton Gins, Gin Feeders and Condensers,**

**And the Celebrated “INDEPENDENCE” Wood Split Pulley, with Bushing System.**

The best and lightest Pulley made. Every one guaranteed. Send for catalogue, testimonials and price-lists. We have the largest works of the kind in the world. Will send one of our Wood Split Pulleys



to any responsible party, for thirty days' trial, free of charge, if it fails to meet our warranty.

**Milburn Gin & Machine Co.**



Send for Illustrated Circular and Price-List.

**E. W. BLISS CO.**

—MANUFACTURERS OF—

**Presses, Dies,**

—AND—

**SPECIAL MACHINERY**

FOR WORKING SHEET METAL.



**Double Seaming Machines, CIRCULAR SHEARS, Squaring Shears, Can Making Machinery, &c.**

Works: Plymouth, Pearl & John Sts. Office, 17 Adams St.

**BROOKLYN, N. Y.**



C. E. RILEY.

WM. B. GRAY

**RILEY & GRAY,**

—SUCCESSORS TO—

**HOWARD & BULLOUGH, & RILEY,**

SOLE IMPORTERS OF

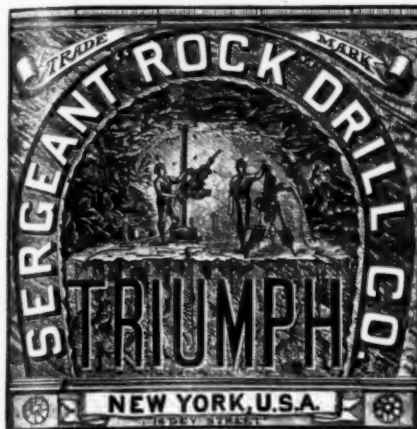
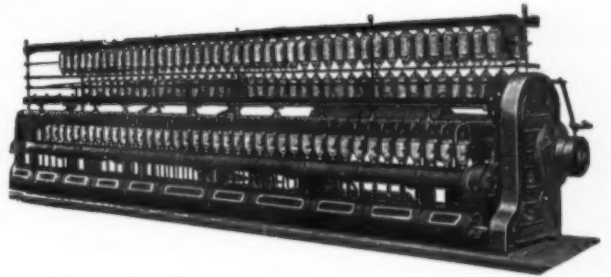
HOWARD & BULLOUGH'S  
**Cotton Machinery.**

ALSO, IMPORTERS OF

Woolen and Worsted Machinery, Card Clothing, Etc.

Correspondence Solicited.

19 PEARL ST., BOSTON, MASS.



## THE "TRIUMPH" ROCK DRILL

and NORWALK AIR COMPRESSOR

Are the Latest and Most Improved Machines that were ever designed for the work required of them. They are the Most Simple, Economical and Effective now known, and will satisfy all Purchasers.

Boilers, Steam Pumps, Hoisting Engines, Pipe and Fittings, Electric

Blasting Apparatus, Powder, Caps and Fuse, Steam and Air Hose, Wire Rope,

—And General Mining and Contractors' Supplies.—

Complete Specifications for Rock Drilling and Mining Plants Furnished on Application.

**SERGEANT DRILL CO., 16 Dev Street, New York, U. S. A.**

**DICKSON MANUFACTURING CO.**

MAKERS OF CABLE MACHINERY FOR NEW YORK & BROOKLYN BRIDGE

LOCOMOTIVES FOR ALL KINDS OF SERVICE

Blast Engines FOR IRON & STEEL WORKS

BESSEMER STEEL PLANT MACHINERY

DERRICK & WRECKING CARS

SPRING PLATE STEEL TIRE CAR WHEELS

CAST CAR WHEELS, MINE CAR WHEELS

STATIONARY ENGINES, HORIZONTAL & VERTICAL, SINGLE & IN PAIRS

HIGH PRESSURE, CONDENSING & COMPOUND, HOISTING ENGINES

CARRIAGES, DRUMS & MACHINERY

COLLIERY MACHINERY

COAL & PHOSPHATE BREAKERS WITH PATENT REMOVABLE STEEL TEETH

SCREENS & VENTILATING FANS

PUMPING ENGINES OF HIGH DUTY TYPES

CORNISH PUMPING ENGINES, PUMPS, VALVES

BOILERS OF EVERY KIND & SIZE

HANGERS, SHAFTING & PULLEYS

GEARS BOTH CAST & CUT

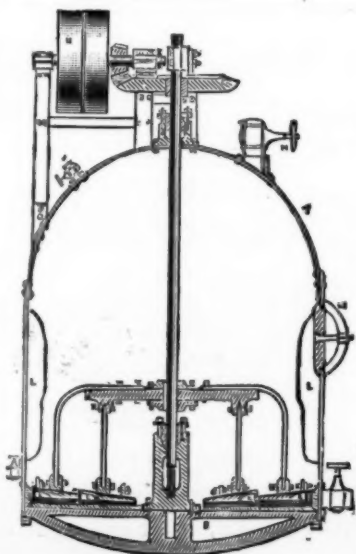
HEAVY MACHINERY OF ALL KINDS

NEW YORK OFFICE 112 LIBERTY ST.

GENERAL OFFICE SCRANTON PA.

SOLE AMERICAN BUILDERS OF THE STOCKPORT GAS ENGINE, AND THE LIGHTFOOT DRY AIR REFRIGERATING ENGINE.

R. M. BOIES, PRES. • W. H. PERKINS, SECY & TREAS. • S. BROADBENT, GEN'L SUPT. • C. W. WATTS, M. E. • E. D. LEAVITT, JR., D. M. E. CONSULTING ENGR. • GEO. B. ROSS, AGENT IN N. Y.



THE MEECH GOLD AND SILVER ORE

## Disintegrating Machine

The Only Method for Preparing the Ore for Amalgamation.

Disintegrating, Decomposing and Desulphurizing the ore under a HIGH TEMPERATURE and PRESSURE OF STEAM HEAT, with chemical action and attrition, dissolves and breaks up the chemical combination in the ore, individualizing, cleaning and separating the atoms of metal from the gangue, perfectly freeing them for amalgamation in combination with the MEECH AMALGAMATION MACHINE and process, (being the greatest combination of Amalgamation known,) will successfully extract 90 per cent. of the metal from rebellious ores, such as Sulphurets, Sulphates, Chlorides, Bromides, Oxides, Tellurides, &c.

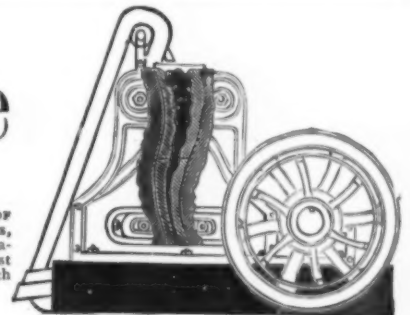
We desire business correspondents in every mining district in the United States.

## THE MEECH CRUSHER & PULVERIZER.

This Machine will CRUSH AND PULVERIZE GOLD AND SILVER ORES to 20, 40, and 60 mesh fine, and from 20, 40 and 60 tons per day. The principles of this machine, making it superior to all others, are the peculiar concave and convex shape of the jaws, with concave and convex projections, which breaks, crumbles, stamps and pulverizes the ore with less power, wear and tear, than any other machine. MANUFACTURED BY

**MEECH & CO., Cleveland, Ohio.**

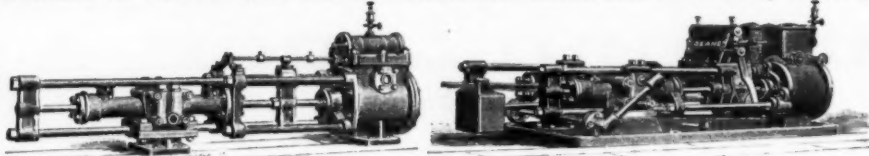
We will contract to erect the Meech Plant of Mining Machinery for successfully treating all grades of gold and silver ore.



# THE DEANE STEAM PUMP CO., HOLYOKE, MASS.

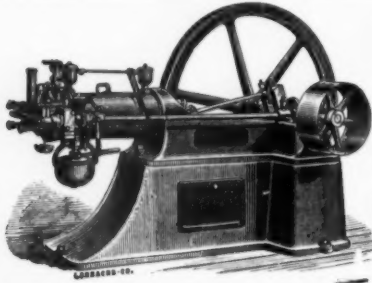
Builders of STEAM AND POWER PUMPING MACHINERY of Every Variety.

Hydraulic Pressure  
**PUMPS**  
 A Specialty.  
 SINGLE OR DUPLEX PATTERN.



Warerooms:  
 Boston, New York,  
 Philadelphia,  
 Chicago, St. Louis.

SEND FOR CATALOGUE NO. 22.



Over 14,000 in Use.

## Otto Gas Engine

20 to 70 per ct. less Gas consumption than ANY other ENGINE.

Working Without Boiler, Steam, Coal, Ashes or Attendance.

Started instantly by a Match, it gives full power immediately. When stopped, all expense ceases.

No explosions, no fires nor cinders, no gauges, no pumps, no engineer or other attendant while running. Recommended by insurance companies. UNSURPASSED IN EVERY RESPECT for hoisting in warehouses, printing, ventilating, running small shops, &c. Sizes: 1 to 25-horse power.

Branch Office, 214 Randolph St., Chicago.

SCHLEICHER, SCHUMM & CO., N. E. cor. 33d and Walnut Sts., Philadelphia.

### WE MANUFACTURE

Roving Frames,  
 Rabbeth and Sawyer Spindles.  
 Double Adjustable Spinning Rings.  
 Twisters.  
 Spoolers.  
 Spooler Guides.  
 Knot Tyers.  
 Bobbin Holders.  
 Banding Machines.

Slasher Warpers.

Chain Warpers.

Warper { Creels and Beams.  
 Reeds and Combs.  
 Stop Motions & Clocks.

Slasher Cut-Markers.

Separator { Doyle.  
 Doyle Improved.  
 Sharples.

Lever Screws for Roving and Spinning Frames.

Traveler Brushes.  
 Dutcher Temples } with Latest Improvements.  
 Hardaker Temples }

Shuttle Guards.

Belt Hole Guards.

Getchell's Improved Thompson Oilers.

Lifting-Rod Cleaners.

Milled Machine Screws.  
 Set Screws, Studs, Etc., Etc.

### REPAIRS

For Spindles, Temples and all our Machinery, at Reasonable Prices.

GEORGE DRAPER & SONS, HOPEDALE, MASS.

TELEGRAPH ADDRESS AND RAILROAD STATION, MILFORD, MASS.

## MECKLENBURG IRON WORKS, Charlotte, N. C.

BUILDERS OF { ENGINES and BOILERS, STAMP MILLS,  
 CRUSHERS, Circular Saw and Grist Mills, CORNISH PUMPS,

### MINING MACHINERY.

Cotton Presses, Water Wheels, Shafting and General Machinery.

JOHN WILKES, Manager.

## BRIDGEPORT BRASS CO., 19 Murray Street, NEW YORK.

— MANUFACTURERS OF —

### Sheet Brass, Seamless & Brazed Brass AND Copper Tubing

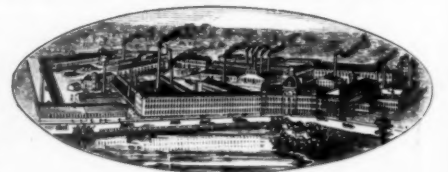
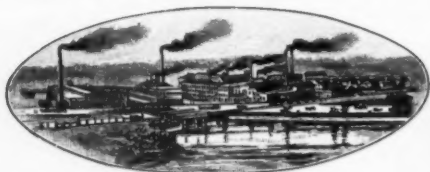
BRASS and COPPER WIRE, and RODS,

Gas and Kerosene Burners and Trimmings. The Celebrated Leader Burner a Specialty.

ELECTRIC COPPER WIRES, Plain and Covered. Particular Attention given to Cutting Blanks and Metals to Order.

## Washburn & Moen Mfg. Co., Worcester, Mass.

MANUFACTURERS OF



Iron, Steel and Copper Wire, Wire Rope, Barbed Wire.

NEW YORK WAREHOUSE, 16 Cliff Street.

CHICAGO WAREHOUSE, 107 Lake Street.



# BALTIMORE Manufacturers' Record.

Published Every Saturday by the  
**MANUFACTURERS' RECORD CO.**

J. W. BIGSBY, President. R. H. EDMONDS, Treasurer.

W. H. EDMONDS,  
Secretary and General Manager.

R. H. EDMONDS, EDITOR.

—OFFICE.—

71 and 73 Exchange Place, Cor. Commerce St.,

—BALTIMORE.—

NEW YORK OFFICE:

Room 6, No. 113 Fulton Street.

—SOUTHERN OFFICE, ATLANTA, GA.—

I. W. AVERY, Manager.

## Price of Subscription Per Year in Advance:

(POSTAGE INCLUDED.)

To UNITED STATES AND CANADA, \$3.00

OTHER COUNTRIES, - - - 4.50

## ADVERTISING RATES:

One square (14 lines Agate, 1 inch) 1 time.....\$ 1.50  
" " " " " 4 " ..... 5.00  
" " " " " 3 mon.....10.00  
" " " " " 6 " .....18.00  
" " " " " 1 year.....32.00  
Extra for outside pages and opposite first page of reading matter.

BALTIMORE, MAY 8, 1886.

THE Birmingham Age states that there is a combination in that city of real estate speculators who are trying to "boom" prices. Birmingham is a city of wonderful natural advantages, and its growth has indeed been marvelous, but if its business men want to restrict its future development they can hardly select any better way than simply to let the world find out that a lot of speculators are manipulating the real estate interests of that place. So far we believe Birmingham's growth has been substantial and permanent, built on a solid foundation; and for the good of the whole South, as well as for the good of Birmingham, we trust that the Age will have no further occasion to speak of a combination of real estate "boomers." Very many promising towns have been ruined by the extravagant prices demanded by real estate owners, who became convinced upon the first signs of prosperity that a fortune awaited the owner of every little piece of property. Instead of offering some inducements to settlers and those who contemplated engaging in mercantile business or establishing manufactures, by asking only a fair and reasonable price for their property, their exorbitant prices have driven away intending settlers, and gradually these towns have drifted back into an almost hopeless inactivity. There are quite a number of towns in the South where this blighting real estate booming has been seriously felt. Birmingham has been regarded as a good illustration of the solid growth of the South, and we hope that its reputation is not now to be injured by speculators.

## The Increasing Prosperity of the South.

The Wilmington (N. C.) Star, one of our always interesting exchanges, is rather disposed to look upon the gloomy side of Southern affairs, and to take the ground that the people of the South as a whole are not growing more prosperous. In this the Star is certainly mistaken. Notwithstanding the disadvantages under which Southern farmers are laboring, they are year by year giving more attention to the diversification of their crops—to the production of corn and provisions—and thus naturally are becoming somewhat more self-supporting. The yield of corn in the South in 1885 was largely in excess of the crop of any preceding year; fruit and vegetable raising is attracting more attention than formerly, and our reports as well as personal interviews are unanimously to the effect that Southern farmers as a class are slowly but surely becoming more prosperous. They are using more improved machinery every year, raising more and better live stock, and, while still carrying heavy burdens, find them gradually growing lighter. The Star says:

It is not to be gainsaid that men of capital, small as well as large, are embarking in manufacturing from one end of the South to the other. But this may or may not be wise under the circumstances. There are cotton factories in North Carolina and to the Gulf of Mexico that are now running merely upon the score of philanthropy—to give employment to the laborers.

Will the Star please tell us why the establishment of manufacturing enterprises "from one end of the South to the other" may not be a wise thing? Certainly these manufacturing interests are prospering; they are adding vastly to the wealth of the South; they are giving employment to thousands of hands that without these factories would either remain in idleness or have to seek employment in other sections; they are furnishing a home market for the productions of farmers, and, in turning out machinery, furniture, building materials, dry goods, &c., they are utilizing the vast stores of raw materials with which the South is blessed, and lessening the quantity of manufactured goods to be purchased in other sections. Take for instance the recent investment of \$40,000 or \$50,000 in a furniture factory at Asheville, N. C., mentioned in our January list of new enterprises. The establishment of this factory adds to the business of Asheville, increases the value of property there, furnishes employment to a number of hands who will be consumers of farm products instead of producers; this factory takes the timber which is so very abundant in Western North Carolina and turns it into furniture. Before the factory was at work even, we understand that the proprietors had contracted to supply the furniture for two of the immense hotels now under construction in Western Carolina. Thus the thousands of dollars that would have gone North for this fur-

niture will now be put into circulation in and around Asheville, benefiting every line of business there. As with this one factory, so with all other manufacturing enterprises established. They all help on the prosperity of every class, farmers, merchants and laborers alike sharing with the manufacturers themselves in the benefits arising from industrial enterprises.

In stating that there are cotton mills in the South "now running merely upon the score of philanthropy—to give employment to the laborers," the Star is greatly mistaken. It is true that for a couple of years Southern cotton mills, like all other manufactures, suffered from the severe business depression. Mercantile interests and professional also likewise suffered, but that does not prove that there should be no more stores, nor that men should cease to adopt medicine, law or other professions as their vocation for life. Southern cotton mills are not now running simply upon a score of philanthropy, unless that philanthropy be to make profits for their stockholders. The mills are not, of course, making large profits yet, but they are recovering from the effects of the late hard times, regaining the losses then made, and many of them are now crowded with orders, some of them having orders enough already on hand to keep them busy for several months. The return of more prosperous times is shown in the fact that mill building has again revived, and, as stated by us last week, four new mills are either under construction in the South or contracted for, while extensive improvements are being made to quite a number of old ones. It is worthy of notice, too, that these four mills are all to be built by men long engaged in cotton manufacturing at the South, and who are therefore capable of judging as to the advisability of building more mills.

## On the Defensive.

The many strikes and boycotts throughout the country, a large proportion of which have been without any excuse whatever, have convinced manufacturers in some sections that they too must combine for mutual protection. For some time there have been rumors of a proposed organization of mill owners in New England, the object being not to make war upon labor or upon trade unions, but simply to act on the defensive. An organization of this sort has recently been formed, and the Boston Commercial Bulletin, in giving some particulars relative to it, says:

The sudden and unexpected collapse of what threatened to be a serious strike at the Whittenton Mills, Taunton, was caused by the discovery that the mill belonged to a huge organization of the textile industries of New England, which has been formed so quietly that it has escaped all notice.

The original society was formed in Rhode Island, and now extends over Rhode Island and Connecticut, and

already includes 49 large woolen mills, with such cotton mills as the Lonsdale and Hope mills. This society was organized for mutual protection. It does not recognize the authority or dictation of the Knights of Labor in any way, but is prepared to use arbitration in the settlement of strikes. The organization is growing in numbers, and it proposes to give each strike careful consideration, and only assist manufacturers who are unfairly treated by their help.

A second society, embracing all the cotton mills of any importance in Maine, New Hampshire and Massachusetts, has been organized. The Massachusetts league is a league of cotton mills, to which the woolen mills are to be admitted, while the Rhode Island society was formed by the woolen mills, and subsequently admitted the cotton manufacturers.

During the last month the cotton mills of Massachusetts have been quietly preparing for organization for mutual insurance against labor disturbances. The numerous and unwarranted strikes, which have crippled industry, choked enterprise, and dammed up the channels of trade, have at last led to concerted action, and a plan of protection has been adopted.

The Bulletin says:

The society has taken the form of a mutual insurance company, organized on a basis of the respective pay-roll of the members. The society is not a corporation and has no stock. Its organization is in a measure loose, and its effectiveness depends entirely on the good faith of the members. The yearly pay-rolls of the Massachusetts mills that have already joined amount to \$15,000,000. Plain cottons, colored cottons, prints and gingham are all represented in the list of members, and every leading cotton mill in the State has already joined. Many of the smaller mills have already joined the ranks, and more are yet to come.

The aims of the society are not in any sense aggressive, and its purpose is not to attack the Knights of Labor, but simply to protect its members against unjust persecution. This fact cannot be too strongly insisted upon. The methods of self-defence which the society will employ are not yet made public. It is hoped that there may be no necessity for their publication, as they will only be made known on the destruction of business by hot-headed and ignorant men.

The Southern mills have not joined the company and probably will not. Except in Augusta, Ga., there is little expectation of trouble with strikers. The mills are far apart, and the operatives, although generally paid less than their Northern competitors, are on the whole contented, as the agricultural pursuits in which they were formerly engaged secured them a much less comfortable life than that they now enjoy.

Labor strikes, even on the most trivial grounds, have hitherto been successful, because the warfare has been between organized labor and disorganized capital. Organized capital may not be, is not, powerful for attack, but it may become a mighty bulwark for defence.

A dispatch from New York states that a combination of the railroads has also been effected for the purpose of self protection in case of strikes. The sugar refiners of Brooklyn, who have had so much trouble with their workmen, have likewise, it is said, joined this big union.



## OUR BIRMINGHAM LETTER.

[Special correspondence MANUFACTURERS' RECORD.]

BIRMINGHAM, ALA., May 3, 1886.

The merry month of May hath arrived on time, bringing sunny skies and green pastures, and all the other beauties of the season, but it has not witnessed any change in the material situation of this community, as reported of late. Industrial and commercial activity continues as usual, and property values advance just as steadily as they have for a number of weeks. At the start there was little outside capital in the movement here in city and mineral property that has astonished the country, but directly it became apparent that the "boom," so-called, was something more than a mere corner lot speculation of the sort made familiar to Eastern capital in Northwestern experience, then funds from abroad began to slip in for investment at a lively rate. For several weeks now the city has been a regular *caravanserai* for strangers, and hotel accommodations harder and harder to find. This fact has gotten abroad enough to cause intending visitors at the North and East to telegraph ahead several days in advance for rooms, and, for some time to come, it is probable that this is the only safe thing to do if comfortable quarters are desired. Nearly every part of the Union is represented in the crowd at the hotels to-day. New York and Pennsylvania are especially well represented among Eastern States by people who are looking for good mineral investments. The sons of the men whose energy and enterprise built up the fortunes of the Keystone State forty or fifty years ago are here in person or by deputy, with the hope of repeating some of that wonderful history of industrial development in Alabama. Western men are here too, and largely in quest of Southern timber lands. But one of the most encouraging features of the movement is the extent to which Southern people and capital are taking hold.

It would probably be a surprise to the majority of our Northern friends to be informed that the city of Charleston, for example, has a large surplus of capital seeking favorable investments. It has been generally supposed that Charleston and its prosperity were effectually knocked on the head during the war and reconstruction, but the fact appears to be otherwise. The money in the de Bardeleben syndicate is mostly Charleston money, and gentlemen interested in that combination assure me that there is plenty more to be had for legitimate industrial projects. If this shows anything, it shows the almost startling material advancement of the section during the past decade. If Charleston be in such sound financial condition, notwithstanding the "slings and arrows of outrageous fortune" which that devoted city has had to encounter since 1861, it is a fair conclusion that other Southern towns and districts have been at least comparatively successful. That they have been so no one who has enjoyed the opportunity to study the question will doubt. The growth of Nashville, Chattanooga, Atlanta, Raleigh, Savannah and Montgomery is proof enough of this. The last named is an exceptionally strong instance! Montgomery, to all appearance, has had little to promote its progress, save the legislature—a questionable good to municipal advancement—and about a million and a half bales of cotton to handle annually. Commissions on the tributary crop and the spendings of a biennial legislature could hardly be taken as causes sufficient to account for the population, improvements and prosperity that everywhere impress the visitor to Alabama's handsome capital city. The real basis is doubtless to be found in the general improvement of everything in the State. Much of the stock of the Elyton Land Co. is held in Montgomery, and every new development in Birmingham sends a

wave of money profit there; and the people of Montgomery are wise enough in their generation to reach out into the mineral district for their advantages. In that district, in one way or another, there is enough to enrich every part of the State. The experience of all who have tried it recommends the medicine to the public.

The steel question is still prominent in the local circles of capital and industry. There is general agreement that steel plants shall be established, and they are on the *tapis* all around; but the camp is fortunately divided as to processes. A few of our leading operators have acquired Bessemer ore territory, and consequently point their efforts toward developments by that process. I give you a few analyses of ores which some of my friends have been lucky enough to find in large deposits within the district. All but No. 4 are grey magnetic ores, much resembling in appearance the product of the Iron Range of the Upper Superior. No. 4 is a red hematite from the Red Mountain near Birmingham:

	1.	2.	3.	4.
Metallic Iron.....	66.	67.	64.	58.
Silica.....	05.	06.	08.	12.
Phosphorus.....	00.04	00.007	00.05	00.13

It may be of interest that the Red Mountain ores are tending toward the Bessemer standard as the veins are penetrated. As an instance, I know of one tract on which the ore has been subjected to a number of tests on the outside of the seam, the determinations being only a fair average of the class. Lately a more careful investigation was made, the results being:

Metallic Iron.....	59.00
Silica.....	18.00
Phosphorus.....	00.11

Of this latter class of ores the supply is unlimited, and there is every prospect that scientific examination will largely increase the percentage of Bessemer deposits.

What the immediate outcome of the steel movement is to be I have already noted in letters to the MANUFACTURERS' RECORD. The Pratt Co. is busily engaged on its steel plant; the de Bardeleben syndicate is reported to have given its order for a Bessemer plant to a Pittsburgh house; the Sloss Furnace Co. is understood to be figuring for a steel plant to be erected in connection with the two new furnaces to be erected this year at Sloss mines; Mr. W. H. Woodward, late president of the Woodward Furnace Co., has, it is believed, completed his arrangements for a steel nail mill near the Alice Furnace, and other steel developments are talked of.

Dr. Pratt, State geologist of Georgia, has been in Birmingham for several days in connection with his new process for de-phosphorizing iron in the furnace. The doctor is perhaps as well and favorably known for his scientific and practical acquirements and achievements as anybody in the section. He had a meeting the other night with a number of gentlemen interested in the subject, and gave a full explanation of his process. It is not in shape for publication as yet, but will be shortly. In the meantime arrangements have been made by which Dr. Pratt and his associate, Mr. Ladd, of Atlanta, will have the use of a furnace plant with which to demonstrate the feasibility of their proposition.

I should be glad to hear from any of your readers who may happen to know of good deposits of manganese convenient to transportation. Although several bodies have been found in or near this district, I think it possible that more of the same sort would find a market during the year. And it should not be forgotten that there is a first-class cotton mill here ready for operation, the entire output of which can be contracted

to responsible parties at a good profit. This, it seems to me, ought to attract the favorable attention of capital.

The local iron market is without any change since my report of last week. The demand from the East is good, and considerable quantities are moving via the Louisville & Nashville Railway by Montgomery and Savannah. Western orders are still affected by the labor situation. Quotations are unchanged.

Work on the Kansas City, Fort Scott & Gulf has commenced. Four parties were started out last week by Capt. Grant, chief engineer of the road, and the first hundred miles toward Memphis is contracted to be in running order before January 1, 1887. The entire line is to be completed within 18 months from April 1st last. It is pretty well understood that the arrangements for the extension of the Birmingham Mineral Railway to Woodstock have been made, and the engineers of the company are now in the field. An effort on the part of the people of Tuscaloosa to secure a further extension to that town may very likely prove successful, supposing they take a liberal enough view of their interests.

Some interest is felt here over the announcement that a large deposit of cement stone, said to be equal to the material from which the Louisville cement is manufactured, has been found at Blount Springs, about 30 miles north of Birmingham. People here who are interested are receiving overtures for the purchase of the territory, but for the present do not care to dispose of the property except for development. Works to manufacture cement would no doubt pay handsomely near Birmingham, as the supply of raw material is unlimited—that is, for one establishment—the market wide and good, and there is little if any competition.

G. B. WEST.

## The Trucking District of North Carolina.

[Special correspondence MANUFACTURERS' RECORD.]

NEW BERNE, N. C., April 29, 1886.

The sounds of North Carolina and their tributaries are in their combination among the most important waterways of the United States, and of especial value to the commerce of the Southern Atlantic States, and to the markets of New England. Should this country ever be so unfortunate as to be at war with a foreign nation, then these sounds would be of inestimable importance to the entire country, for through them and the internal system of navigation north of them, in connection with the great railway systems of the South and Southwest, all States east of the Mississippi could continue their interstate commerce without danger from hostile fleets or invading armies. From early spring to midsummer the Southeast supplies the Middle and New England States with early vegetables and fruits, and what was at the beginning of this trade an attempt to provide luxuries for the wealthy has grown to be the meeting of a demand from the entire population of the North. The fruit and vegetable products of the South are no longer luxuries, but actual necessities to the Northern public. Transportation lines have been compelled to provide facilities for this trade, and the competition between such companies on the one side and of producers on the other, has been so great that the spring and early summer produce of the South is sold in Northern cities at prices within the means of all their citizens. To properly handle this great traffic, both commission houses and transportation companies are forced to employ many more assistants than they would otherwise require, while the farms and plantations on which these perishable commodities originate, give work

and liberal pay to tens of thousands of women and children. Besides all this, subsidiary industries have grown up in connection with this traffic, such as the manufacture of baskets and crates, which give remunerative work to multitudes of people and employ a large aggregate capital. An interesting feature of the "truck" business of Eastern North Carolina is that it has more than made good the falling off in the annual production of naval stores. For many generations, "pitch, tar, turpentine and lumber" were put down in school geographies as the staples of North Carolina's commerce. The first three of these are such no longer, for, although something is still done in them, their total annual production is nothing to what it was thirty years ago. Georgia has become the greater producer of naval stores, and in developing that industry has incidentally aided the trucking interests of this State. Every season the negro laborers, trained to the turpentine trade, leave their families here and go to Georgia, where they earn good wages at their calling. Their women and children furnish plenty of hands for the truck farmers. At Christmas-tide the men return with plenty of money, and the reunited families have a protracted and jovial holiday. The system works well for all parties, but especially for the truck farmers, who, but for this cheap and abundant labor, would be unable to continue their business on its present large scale.

This section of the State owes to a merchant of New Berne, Mr. George Allen, a debt of gratitude for originating this important and profitable industry. Fifteen years ago the people here bought their early vegetables and their strawberries from cultivators elsewhere. Mr. Allen, convinced that they could share in this profitable trade, sought by precept and example to induce his fellow-citizens to adopt his views. At first it was up-hill work, but the few who took his advice were so amply repaid that ere long the business was established on a permanent footing.

I was taken to-day by Mr. Green, of the banking firm of Green, Foy & Co., out into the heart of the trucking district in this immediate vicinity. This was the first general peapicking of the season. There were fields of from fifty to one hundred and fifty acres in extent green with vines, and dotted over with bands of industrious pickers, while by the side of the cart paths were piles of crates, and at intervals at the ends of the rows were those that had been filled, standing on end ready for the stencil. Mule carts laden with full crates were encountered on the highways, while others were in the fields receiving their loads. Whenever a crate was filled the picker received twenty-five cents from the superintendent, and went back to the row with an empty basket and happy face to resume her occupation. At least two thousand women and children were at work to-day, to whom was paid—a quarter of a dollar at a time—not less than \$1,500. The steamer Shenandoah took away 4,000 crates this evening; the railroad half as many more, most of which will be delivered in New York Monday morning, and before this letter is published from \$10,000 to \$12,000 will have been received here for this day's pea shipments. Turnips, cabbages and Irish potatoes will follow the pea crop in rapid succession, and, as during this week there were two days of rain, all these vegetables are looking well, and give promise of a speedy and abundant crop. The most forward potatoes are now about the size of pullets eggs, and cabbages are beginning to head.

The branch house of Moore & Brady, of Baltimore, has done a fine business in canning oysters here during the season which ended last Wednesday. They have put in some very fine pear canning machinery this spring, and will commence that branch of their business at once. This firm secured from the city, at a nominal price, the lease for 99 years of an extensive frontage on the Neuse



River, where they put up a large building and a wharf. With their shells they are constructing wharves and slips, which will, in a few years, be completed and give them a very large place for the transaction of their business.

The extensive establishment of the S. H. Gray Manufacturing Company, at the mouth of the Trout River, opposite this city, is the most conspicuous growth of buildings in view of travellers coming, by steamers, from Albemarle Sound. In these buildings are made millions of wooden plates for grocers, pie dealers and picnickers. Here also are the pulp works, where cypress logs are torn into small fragments by a peculiar machine, and these are drawn by an air blast into the great cauldron where they are boiled to a pulp. This is pumped into a huge tank, and stirred in water until free of all dirt, when it is run out into a paper machine, deprived of most of its water, reduced to the desired thickness, and then carried to the dryer. The system employed was invented by a Swede, Eckmann by name. This establishment represents an investment of \$65,000. New and costly machinery has been ordered, which will add considerably to that sum. One of the buildings is two stories high, and 200 feet long by 40 feet wide; another is 80 feet long, of the same width as the first, and 3 stories high. A laboratory and a brick kiln, for roasting magnesia, are also parts of this establishment. The pulp has been pronounced by experts the best they have ever used. It is simply a mass of minute, but very tough fibres, that look under the microscope like the finest and whitest of wool. This will make a new demand for cypress—a timber that abounds in these lowlands and often attains immense size. Doubtless the success attending this new enterprise will lead to many like it in the coast counties of the South. B. S. P.

### An Attractive Texas Valley.

[Special correspondence MANUFACTURERS' RECORD.]

GLEN ROSE, TEXAS, April 26, 1886.

The Paluxy Valley is the charmed spot of Texas. The river rises in the rich rolling prairies of Erath county, flows through the corner of Hood, and thence in a southeasterly direction through Somerville into the Brazos. In length it is about thirty miles, has a smooth solid rock bed most of the way with many falls, and hence a very swift current, affording numerous water powers. It passes alternately through rich coves and deep rock-walled gorges, and is lined with a luxuriant growth of cedar, sycamore, willow, cottonwood, hackberry, oak, pecan, etc. The valley lands make the finest farms, which grow abundantly the cereals, ribbon-cane, melons, vegetables and fruits. All along this valley, wherever wanted, are obtained at a depth of from 63 to 304 feet artesian wells, which flow from 5 to 160 gallons per minute, owing to size of bore. The water is free-stone, iron, white sulphur and red sulphur, according to depth of well, and is clear as crystal and cold as Blue Ridge springs. The water rises to a height proportionate to depth of bore, and hence can be thrown upon any portion of farm. They furnish the most perfect system of irrigation, in fact, enable the farmers and gardeners to defy droughts. The hills and mountains furnish abundant grass, while the coves down in the canons enjoy almost perpetual spring, and afford all needed protection for stock in winter. All in all it is a marvelous valley, marvelous in its water supply, rich in its soil, timber and building stone, and unsurpassed in the equability of its climate.

With all these advantages there are at present but three manufacturing enterprises in the valley—one old-fashioned corn mill at the place called Paluxy, a buhr-stone flouring mill and a tannery at this place. The latter has just begun operations, and is using cedar canes in the process, by which,

with sulphur water, it is claimed, hides can be tanned in one-third the time required with oak ooze.

A few enterprising capitalists and manufacturers have recently prospected the valley and expressed themselves forcibly and favorably impressed with the natural advantages here offered. There is talk of a boot and shoe factory, a harness and saddle factory, a cedar bucket factory and a large cotton factory. At present water powers and timbered lands can be had for a mere song, and all things considered no greater natural advantages exist, and no greater inducements are offered manufacturers by the people of any section.

This place—Glen Rose—is now on a little "boom" as a summer resort. Maj. T. C. Jordan has opened up the Cottage Hotel property with about 20 cottages, and will add more, while Dr. T. B. Campbell is building a two-story, 60x80 rock hotel. But these will not be half sufficient to accommodate coming visitors, who, as heretofore, will be compelled to "camp out." There are in this place 86 artesian wells flowing in abundance the kinds of water above mentioned; the scenery is beautiful and picturesque, and there is no doubt this place will soon be the chief health and pleasure resort of Texas. It lacks naught but first-class accommodations.

People in this section are becoming awake to the importance of industrial enterprises, are beginning to learn that the only source of wealth and prosperity does not lie in calves, corn and cotton, and that useful knowledge is not confined to politics. They are demanding of their schools more technological education—more of the applied sciences and useful arts, and of the papers for which they subscribe more practical, utilizable ideas—ideas and suggestions which will enable them to learn a new way of doing a thing to save an hour or a dollar. On this line it is admitted the MANUFACTURERS' RECORD is doing for the South incalculable good. JAS. U. VINCENT.

### A New Industry.

Some months ago we gave a few particulars about a new industry established at Cronley, near Wilmington, N. C., which consists in the manufacture of oil, matting, &c., from the straw of the pine tree. The Charleston News and Courier in a late issue published a detailed description of this industry, from which we take the following:

#### THE PINE FIBRE MILLS.

As has been said, the company is now engaged in the manufacture of fibre from pine straw. Nobody in the South has ever before heard of pine straw being used for anything but for manure. The Acme Manufacturing Company have put it in competition with jute, cocoa and flax. The process is the invention of Mr. A. F. Scott, who is the superintendent of the mills. The representative of the News and Courier, in company with the officers of the company, visited Cronley on Monday last, and after a most hospitable entertainment was conveyed through the mill.

The green pine straw, or leaves, gathered in the surrounding forests, is brought to the mills, where the company purchases it at fifteen cents per hundred pounds. After having been weighed, the straw is carried into a shed 100 by 25 feet, and is spread upon the floor to be cleaned and to prevent its becoming heated. An elevator takes the material to the second floor of the building, where it is placed in two iron cylinders set up on end and surrounded by steam pipes. These extractors are ten feet deep and about four feet in width. In these the pine leaves are thoroughly steamed, the vapor going through pipes into an ordinary dis-

tillery worm in an adjoining house. Here it is condensed. The result is

#### THE PINE LEAF OIL.

the leaves yielding about half a gallon of oil to 100 pounds of straw. The oil is a valuable product, and is destined to take an important part in the advanced pharmacopoeia. It is very highly antiseptic, possesses the advantage of being useful as well for internal as for external application, and is valuable for many surgical and medicinal purposes. The liquid which is condensed from the vapor with the oil is useful for various purposes in the manufacture of other fabrics.

After the oil has been extracted, the pine straw, which has become a beautiful black in color, is placed in six large iron vats, seven feet wide, eight feet long, and five feet deep, and with a capacity for holding from 3,000 to 4,000 pounds each. It is here mixed with water and alkalia and thoroughly boiled, the process being necessary to remove the silica which forms the outside covering of the leaf. This is a very difficult operation, requiring great skill and care. The silica which is removed is useful for tanning and other purposes. During all this process of cooking, the pine leaf retains its aroma. The last boiling process continues for twelve hours, after which the straw is soaked for forty-eight hours more, and it is then ready for the machinery for

#### THE USES OF THE OTHER FIBRE.

Aside from its use in the manufacture of carpets, matting, &c., the pine fibre has many other valuable qualities. A prominent physician of Wilmington, to whom some of it was sent, writes as follows of it:

"The fibre made of pine straw is a most valuable agent in the treatment of simple and compound fracture, surgical dressing after operations and suppuration of wounds. It is superior to cotton batting, lint or oakum. Its aromatic odor drives away flies and prevents maggots from burrowing in wounds, and I think is a disinfectant of the first order."

The surgeon of the Wilmington hospital writes:

"In my opinion the fibre from which the pine carpets are made possesses a certain balsamic substance peculiar to our native pines, and has a soothing effect upon diseases of the mucous surface of the air passages."

Still another prominent and successful physician writes:

"It is an excellent absorbent dressing in cases of wounds, abscesses, fractures, &c. I believe it will prove to be far superior to oakum, so generally used for the purposes to which the latter is applicable. In addition to its antiseptic properties, it is capable of absorbing any stronger antiseptics we may have occasion to add, such as corrosive sublimate and iodoform."

#### CUTTING UP THE LEAVES.

This is performed in another and an adjoining building. The straw taken from the vats, and still damp, is first put into a "rubber," as it is called, which is the invention of Mr. Scott, the superintendent, and which consists of a series of cylindrical screws working together with rotary and lateral motions. The machine is too complicated to be described in cold print. Suffice it to say that the straw, being fed into it, comes out on the other side a pure fibre of a rich dark brown color and of soft texture. During all these processes it has been kept saturated with water, but it is next taken to the wringing and breaking machine, where the water is squeezed out and the curling process is begun. It is then carried to the carding machine, through which it passes, and thence to the drying machine, where every particle of moisture is evaporated, and thence to the press, where it is put up in bales ready for market. The fibre is packed in burlap bales, 225 pounds to a bale, and is shipped in car-load lots of 50 bales, the cars being loaded at the mill doors. It brings

from 3½ to 5½ cents per pound, according to grade. The Acme Company always keep on hand a stock of about 1,000 bales besides that which they use in their carpet factory. The mill employs about 30 operatives and is run by a 50-horse-power engine.

#### CARPET MAKING.

The carpet mill, which is situated some distance from the fibre mill, is a large two-story structure, which is, however, as yet in its infancy, as the company has but recently commenced the weaving of carpets and matting. The appliances and machinery are about the same as those in use in establishments of like nature, the machinery, of course, being adapted to the spinning and weaving of the new fibre. This is brought over from the fibre mill after being dried, and is first put through a carder and cleaner, all the impurities being removed, and, after being carded, emerges in the shape of slivers about 3 inches in width. The fibre now first assumes the appearance of yarn. These slivers are caught in cars, and then go through a drawing frame where four slivers are converted into one. A second drawing frame converts two of these into one, the sliver growing smaller and more condensed all the time. Next it is taken to the roving frame, whence it emerges in the shape of coarse yarn, and is wound upon spools. It is taken to the spinning frame, and finally to the twister, where two, three or four strands are twisted into one. It is then ready for the loom. To make colored carpets the yarn is either dyed or bleached, the yarn being wound into hanks for the purpose.

At present the company is running but one loom, which was made for experiments. These have proved so satisfactory, however, that orders have already been given for 30 additional looms, while a contract has been made with a well-known house in New York to handle all the product of the mills. The carpets are made up in rolls and in various patterns. The natural color of the pine straw yarn is a rich dark brown, which when bleached becomes a creamy yellow. Stripes of blue, red, green and yellow are woven into the patterns. The matting is made to imitate the finer grades of cocoa so perfectly that were it not for the aromatic odor, which is one of the best qualities of the pine carpet, an expert would find it difficult to tell one from the other.

WE may safely assume that the extreme depression which has characterized the manufacturing business of the civilized nations during recent times is and will continue to be less felt in the South than in almost any other region, because here the manufactured output is not yet adequate to the home demand for consumption. Until the development has extended far beyond any reasonable expectation of present progress, it will not be unsafe for our people to invest their surplus earnings in manufactures of almost any sort fancy may dictate. The returns of any well-managed business are certain to be in excess of the profits which similarly invested capital can achieve in the North or East.—New Orleans Picayune.

THE development of the manufacturing interests of the South affords much gratification to the people of this section. As the advantages of this part of the nation become better known, the increase will be larger and the results more pleasing. The growth is steady, and the "boom" will come in time. Eastern capital has found many opportunities for investment, and millions of dollars from the great money centers are aiding to build up Southern enterprises. Many local capitalists are gradually becoming less timid, and are inclined to follow in the footsteps of more venturesome men of means.—Nashville (Tenn.) Banner.

If you wish to keep posted on the progress of the South, read the MANUFACTURERS' RECORD. Price \$3.00 a year.



# CONSTRUCTION DEPARTMENT.

**WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.**

## ALABAMA.

A saw mill will probably be erected at Brewton, Ala., by G. C. Harold.

The name of the \$100,000 stock company, reported last week as formed at Edwardsville, Ala., to engage in gold mining, is White Gold Mining Co. The incorporators are S. F. Bees, of that place, and O. & O. W. Marble, of Birmingham.

G. C. Allen and J. H. Robinson are erecting a saw mill near Isbell, Ala.

## FLORIDA.

The Seville Saw Mill Co., Seville, Fla., has been reorganized and incorporated as the Seville Lumber Co., with Lawrence Miller as president; B. M. Miller, secretary and treasurer, and W. V. Spencer, superintendent. The capital stock has been increased to \$15,000.

The capital stock of the Central City Ice & Storage Co., reported last week as organized at Gainesville, Fla., with J. G. Nichols as president, is \$10,000.

J. Pierce will establish an artificial stone manufactory at Jacksonville, Fla.

Messrs. Daniels will establish sand-brick works at Woodbridge, Fla. The machinery is being purchased.

Johansen & Isgreen are moving their saw and planing mill from Orlando to Arcadia, Fla.

J. A. Dennis, Orlando, Fla., has enlarged his lumber mill, and will put in some new machinery.

The Florida Mutual Consolidated Stock Co., capital stock \$100,000, has been organized at Conant, Fla., to buy and sell property, operate mills, construct boats, etc.

A. P. Dixon and John P. Dunn are preparing to erect a saw mill at Woodbury, Fla.

A large cigar factory is being erected at Key West, Fla., by Cruz Bros.

W. Kemble Lente, Alfred B. Mason and H. G. Payne have incorporated at Palatka, Fla., the Palatka Street Railway Co.

## GEORGIA.

The contract for building the new jail at Savannah, Ga., previously reported, has been let to W. F. Bowe, at \$47,780.

C. J. Brown, S. C. Upshaw, W. P. Sloan, J. B. L. Williams and others, Atlanta, Ga., have incorporated the Mutual Manufacturing & Loan Association, capital stock \$20,000, to manufacture lumber and do a loan business.

A new building will be erected by the Augusta Exchange, Augusta, Ga., to cost \$8,000.

E. H. Coates & Co., previously reported as erecting a cotton mill at Augusta, Ga., have, with Charles E. Claghorn, William F. Herring, Charles A. Maxwell and George W. Crane, incorporated the Dartmouth Spinning Co., capital stock \$100,000.

The Board of Commissioners, Rome, Ga., will receive bids until June 7 for building two iron bridges across the Etowah river at that place.

The Cherokee Iron Co., Cedartown, Ga., are repairing their furnace and putting in new boilers.

R. M. Brooks will erect at Jenkinsville, Ga., an agricultural implement factory and a foundry and machine shop. A saw mill is being erected, and a brick yard will be started at the same place.

Some new machinery is being put in by the Perry Manufacturing Co., Perry, Ga.

J. P. Bonds, Trenton, Ga., contemplates developing an iron ore mine near that place.

## KENTUCKY.

The distillery of S. J. Greenbaum, Nicholasville, Ky., reported last week as burned, will be rebuilt on a larger scale.

B. F. Pratt & Co., Greenup, Ky., have added grist mill machinery to their cooperative factory.

A bill has been introduced in the Kentucky legislature to incorporate the Kentucky Midland Railroad.

The Breckenridge Co., capital stock £500,000, has been formed to acquire the capital stock of the Cloverport Oil & Coal Co., Cloverport, Ky. The latter company own 6,000 acres of land near that place, in Breckenridge and Hancock counties.

## LOUISIANA.

John Gerspach has purchased some new machinery for his sash and blind factory near Monroe, La., and machinery for manufacturing bricks.

A. Socola, New Orleans, La., has asked for permit to erect a rice mill on Toulouse street.

The contract for building the new jail at Tallulah, La., previously reported, has been let to the Pouley Building Co., of St. Louis, at \$6,999.45.

## MARYLAND.

The Easton Water Works Co., Easton, Md., previously reported, have let the contracts for building their works. The cost will be about \$30,000.

The contract for the iron work for the new post-office at Baltimore has been awarded to Bartlett, Hayward & Co. at \$60,000.

P. M. Weist is refitting his flour mill near Mayberry, Md., with new machinery.

The fire commissioners, Baltimore, will receive bids until May 11 for two new steam fire engines.

A large storage warehouse will be built at Salisbury, Md.

## MISSISSIPPI.

A saw mill and woodenware factory is to be erected at West Point, Miss.

## NORTH CAROLINA.

M. L. Hussey is erecting a two-story brick carriage factory at Tarboro, N. C.

An ice factory is being erected at Tarboro, N. C.

The Wilmington Electric Light Co. has been incorporated at Wilmington, N. C., by C. E. McNett, E. E. Burriess, J. W. Atkinson, E. P. Bailey, H. A. Burr and others. The capital stock is \$40,000. The company are erecting the plant previously reported.

An ice factory is to be erected at Washington, N. C. The machinery, it is said, is now being purchased.

The Raleigh & Gaston Railroad will build a new round-house at Raleigh, N. C.

A distillery has been started at Trap Hill, N. C., by William Bittings & Bro.

A stock company will probably be organized at Monroe, N. C., to build a flour mill.

## SOUTH CAROLINA.

The Columbia Hosiery Co., Columbia, S. C., will move into a new and larger building and add some new machinery.

Kershaw county, S. C., has decided by vote to issue \$125,000 in bonds to aid the construction of the Charleston, Cincinnati & Chicago Railway.

## TENNESSEE.

The capital stock of the company reported last week as chartered at Chattanooga, Tenn., by M. H. Dooley, C. S. Wilkins, W. A. Wilkins and others, to manufacture oil cups for railroad cars, is \$100,000.

The Middle & East Tennessee Central Railroad has been organized with John A. Fite as president; W. A. Caruthers, vice-president; H. H. Pickering, secretary, and W. A. Reeves, treasurer. The road will extend from Gallatin to Carthage, Tenn.

It is stated that Mr. Howard, president of the St. Louis Pipe Works, has purchased 15 acres of land at Chattanooga, Tenn., and proposes, with several other pipe manufacturers, to erect large pipe and foundry works, to employ 600 hands and have a daily capacity of 200 tons. It is also said that the plans are being prepared, and work will begin soon.

It is rumored in Chattanooga, Tenn., that two or three Eastern factories will be removed to that city.

D. Hughes, Chattanooga, Tenn., is repairing his planing mill, and will put in some new machinery.

W. J. McMurray, D. Deaderick, Pitkin C. Wright, Charles Morgan, P. Byrne, William Stockwell and W. G. Sadler have incorporated at Nashville, Tenn., the Citizens' Natural Gas & Petroleum Co.

The Speers Wadding Co. has been incorporated to manufacture leather belting in Shelby county, Tenn.

W. A. Settle and Clay Stacker have formed, at Clarksville, Tenn., the Clarksville Electric Light Co.

The Anchor Spoke & Felloe Co., Kingston, Tenn., will, it is stated, increase their capital stock and enlarge their plant.

The Schlitz Brewing Co., of Milwaukee, Wis., will erect a five-story building at Memphis, Tenn., 150x150 feet, and put in it ice and beer bottling machinery. The cost will be about \$50,000.

Moore & Samuel have added a grist mill to their saw mill at Redell, Tenn.

## TEXAS.

The capital stock of the Paris & Great Northern Railroad Co. has been increased to \$500,000.

John A. Blaydes and Mr. George will erect a large sanatorium at San Antonio, Texas. It will cost about \$50,000.

The Abilene Water Co., capital stock \$60,000, has been incorporated at Abilene, Texas.

The mayor of Cleburne, Texas, will receive bids for erecting a school building. The cost is not to exceed \$13,000.

William Lavham contemplates erecting a flouring mill near Glen Rose, Texas, soon.

J. N. Haney & Co., Granbury, Texas, will refit their flour mill with roller process machinery.

The Farmers' Alliance, Walnut Springs, Texas, are, with B. F. Russell and others, organizing a company to erect a large roller flour mill.

The Sierra Carmen Mining Co., capital stock \$50,000, has been chartered at San Antonio, Texas, by E. O. C. Ord and L. D. Dibble, of that place; J. N. Browning, of Mobetie; James T. Ord, of Laredo, and Mr. Trevino. The operations of the company will be carried on in Texas and Mexico.

It is reported that Chambers & Barnes are erecting a saw mill and chair factory at Daingerfield, Texas.

The Waco Street Railway Co., Waco, Texas., will extend their lines two miles.

The Bastrop & Taylor Railway, capital stock \$320,000, will be incorporated in Texas.

A \$200,000 stock company is being organized at Fort Worth, Texas, to erect a factory for manufacturing carriages, wagons and agricultural implements. It will employ about 200 hands.

The building of a cotton compress at Temple, Texas, is being considered.

It is stated that the Mexican Ore Co. will erect a corrugated iron building and \$15,000 worth of machinery at Eagle Pass, Texas.

A company has been organized to erect a cotton compress at San Antonio, Texas.

An electric light plant will soon be erected at Sherman, Texas.

The contract to build the Dallas & Greenville Railroad, previously reported, has been let to Donnelly & Co., of Aurora, Ill.

## VIRGINIA.

H. D. Whitcomb, Richmond, Va., will receive proposals until May 10th for building a bridge, 300 feet long, at Clifton Forge, Va., for the Richmond & Alleghany Railroad.

The Speedwell Furnace, at McTeer, Va., will be put into blast soon, and the Walton Furnace, at Max Meadows, June 1.

Graham & Robinson have erected a 5-story flour mill at Graham's Forge, Va., with a daily capacity of 50 barrels.

The Norfolk & Western Railroad are extending their New River branch seven miles. The contract has been let to George M. Evans, Roanoke, Va.

## WEST VIRGINIA.

The Piedmont & Cumberland Railroad Co., capital stock \$500,000, has been incorporated in West Virginia by H. G. Davis, Stephen B. Elkins, Thomas G. Davis, G. W. Harrison and others, to build a road from Piedmont, W. Va., to Cumberland, Md. The principal office is to be at Piedmont.

The Pneumatic Power Co., of West Virginia, have increased their capital stock to \$500,000. The office of the company is at Washington, D. C. C. E. Creecy is president.

C. P. Brown, E. L. Rose, H. Quarrier, T. C. Moffatt, George Wise and others have incorporated at Wheeling, W. Va., the Wheeling Oil Co., to bore for oil and natural gas. The capital stock is not to exceed \$500,000.

## BURNED.

The saw mill of William Klipstine, Bloomington, Md.

The saw mill of Dasher & McCauley, Butler, Ga.

The shingle, saw and grist mill of William Cooper, Enterprise, Ky.

The mill of the Escambia Lumber Co., near Pollard, Ala.

The brewery of John Seiler, Covington, Ky., damaged \$3,000 by explosion.

Jenkins Bros' saw mill at Daingerfield, Texas, wrecked by explosion.

The phosphate factory of Dennis Maynard, New Windsor, Md.

B. H. Harrell's saw mill, 8 miles from Eastman, Ga.

The steam grist and shingle mill of R. J. Scates in Richmond county, Va.

## LOCKWOOD, GREENE & CO. MILL ENGINEERS

Office, 65 Westminster St., Providence, R. I.,

Carefully prepared plans, specifications and estimates furnished for the construction, equipment and organization of new mills and the revision and improvement of old.



S. J. Thigpen's saw mill, three miles from Raymond, Miss.

Mr. Foster's steam saw mill near Federalsburg, Md.; loss \$2,000.

F. W. Farmers' gin at Perryville, Ark.

### Rebuilding Foundry & Machine Works.

PARKERSBURG, W. VA., April 30, 1886.  
*Editor Manufacturers' Record:*

I am rebuilding my foundry and machine works. The main building is 85x45 feet; wing 35x35 feet; engine room 18x18 feet—all of brick. I expect to have buildings completed by June 1st. The buildings will be very strong and substantial, and of modern design.  
J. H. COLE.

### A Cotton Mill.

LEXINGTON, N. C., May 1, 1886.  
*Editor Manufacturers' Record:*

W. E. Holt, of Alamance county, is building a cotton mill here for both weaving and spinning. The dimensions of building are 50x210 feet, two stories. C. A. HUNT.

### 15-Ton Ice Factory.

AUSTIN, TEX., April 27, 1886.  
*Editor Manufacturers' Record:*

We have just erected a 15-ton ice factory and will be in operation by May 5th. We call it the Lone Star Ice Works. There are two other factories here of about 10 tons capacity each.  
ZILKER BROS.

CLAYTON, GA., April 30, 1886.  
*Editor Manufacturers' Record:*

I am going to establish a furniture factory in Clayton; also make wagons and buggies, doors, sashes and blinds. I have bought an engine and several pieces of machinery.  
W. C. DONALDSON.

WASHINGTON, N. C., April 29, 1886.  
*Editor Manufacturers' Record:*

An ice factory will be established, but I do not know the exact date, as party has gone North to purchase machinery for it.  
P.

### Carriage Factory.

TARBORO, N. C., May 3, 1886.  
*Editor Manufacturers' Record:*

I am building a brick carriage factory two stories high, fronting forty feet on Main street. There is an ice factory being built here, and is expected to begin work making ice in about 15 or 20 days. M. L. HUSSEY.

### Will Rebuild.

LOUISVILLE, KY., May 3, 1886.  
*Editor Manufacturers' Record:*

Our distillery at Nicholasville was totally destroyed by fire April 25. We will rebuild at once on a much larger scale than before, adding all the latest improvements.  
S. J. GREENBAUM.

SEVILLE, FLA., May 5, 1886.  
*Editor Manufacturers' Record:*

Our company has reorganized under the name of Seville Lumber Company, and incorporated. The capital stock has been increased to \$15,000. L. Miller is president; B. M. Miller, secretary and treasurer, and W. V. Spencer, superintendent.  
B. M. Miller.

COLUMBIA, S. C., May 3, 1886.  
*Editor Manufacturers' Record:*

I am about to move into a new building, three stories and basement, and increase my force to 150 hands. I propose putting in two sets of cards and spinning. Business increasing and every way satisfactory.  
COLUMBIA HOSIERY CO.

H. L. MOULTON.

### Ice & Storage Co.

GAINESVILLE, FLA., May 1, 1886.  
*Editor Manufacturers' Record:*

The Central City Ice & Storage Co. has a capital of \$10,000. Will be in operation as soon as building and machinery can be put in order. President, L. Kline; vice-president, M. Endel; treasurer, H. E. Day; and G. K. Broom, J. W. Williams, L. A. Burrus, Ferd. Beyer, directors. JOHN G. NICHOLS.

DURHAM, N. C., May 3, 1886.  
*Editor Manufacturers' Record:*

Our city council are in communication with some parties with a view to establishing water works, but no contract has been awarded yet.  
G. W. WOODWARD.

### Florida.

BY M. B. HILLYARD.

[For the MANUFACTURERS' RECORD.]

I realize the impossibility of pleasing both or either of two large classes of people in writing of Florida. One class will revolt at any due enthusiasm. They care not how much praise one bestows on corn and hogs, but flowers and oranges must pass with frigid mention. Skunk cabbage they do not object to, but a choice bouquet they have no use for. The other class will insist that you paint Florida in—"The light that never was on land or sea;" that "every prospect pleases," and each day is "a bridal of the earth and sky."

Now this latter class err on the side of beauty, an exalted enthusiasm, and in the direction of right and truth. It will not do to sneer at this and call it overdone, the hysterics of æstheticism, sublimated affectation, etc. The love of mountains and flowers, of balmy climes, is as practical, as true as love of *belles lettres*, of the "fair humanities," of painting, of sculpture, or even of corn and beef and pork. One cannot write soberly of some, and I think the best, aspects of Florida. The pulses refuse to be equable and the pen self-contained. The name is like an elixir, and the imagination is at once plumed with it. Nor is this responsiveness without its uses, aside from its delights. It is a sort of Arethusa, or a spring of nepenthe, where the wounded sensibilities may find a lenitive; where the "fitful fever" of life may be soothed; where the bondage of routine may be broken; where the dull heart may be gladdened; where a refuge may be found from "weary, carping care;" where we may enjoy the "divine, enchanting ravishment" of nature and the soft witchery of her lofty spell. And why should not Florida be painted in brilliant hues? If, in describing the polar regions, one should have no glow of language, no hint of flower nor fragrance, because it is fitness, why should not one speak of orange groves, of a—

"Land of delicious lights and floating shades" as a fact? Ought an Italian sunset to be limned in the cold, sombre, cheerless tints of an arctic one? We should be ashamed to talk about potatoes, cabbages, corn and hogs in anything but plain language; but should we rob flowers of their hues, because some reader is color-blind; or of their fragrance, because another has no sense of smell? The flowers and fruits have their rights as well as potatoes, corn and hogs; and dollars figure just as high and swell a bank account as well from oranges, pineapples, citrons, lemons, etc., as from the former.

And yet, even from the standpoint of utilitarianism, into the "horn of plenty," along with the oranges, lemons and pineapples, Pomona pours, Flora will put her flowers. It does not detract from the sweetness of perfumes because one puts them in the marts for sale. Mere money-getting in Florida has a halo, a fragrance, an atmosphere about it that it has not elsewhere. This exaltation, this almost glorification of

industry, this *aureola* about the brow of thrift, is one of the unique phases of Florida life. Nowhere else does money-making seem so much a pastime and labor a holiday. The sweat of the brow is transmuted to perfume; "dry" statistics become blooming and odorous; utilitarianism is idealized; capital is æstheticized; thrift is glorified, and the duty and dignity of labor are veiled by its beauty as by a rosy cloud. "The chink of the guinea" finds an endearing and excellent accord in the melodies of bird-songs. Embellishment is not only the embodiment of the soul's aspirations after the beautiful, not only the pledge and promise of remuneration, but remuneration itself. Industry does not swelter in the sweat of toil, but is bathed in the elixir of delight. It brings not only money, as do hogs and hominy, but the blissful remunerations of flowers and beautiful fruits. Indeed, labor is not only the handmaid of thrift, but his enchanting mistress.

But, whatever one may think of Florida from the standpoints of money-making or health, the name is certainly a spell. It is not only suggestive of fragrance, but almost redolent. It acts like an incantation upon the imagination. Her clime is at once bounty and beauty. She seems the theatre of the "selectest influences" of nature in her softer moods, the haunt of the muses, the land of soft and fragrant airs, perpetual flowers and unfailing bird-songs. It is such a place as is dreamed of and sighed for by young lovers, in the engrossing reveries of entranced day-dreams. It is the Mecca of the cultured voluptuary, and the asylum of the invalid. And not only is her spell upon the imagination, but upon the memory. The pages of history and poetry revive; pages where genius has recorded her highest triumphs of description. Arcady and the vales of Cashmere bloom afresh; Cathay and Candahar revive; the Tuscan fields, the famous Arno and star-bright Italy, and the place of—

"Dance and Provencal song and sunburnt mirth."

Why should she not become the future nursery of poets; a precious repository of the beautiful; at once a glorious picture gallery and nursery of genius; where may be stored the ripe fruits of genius, and where genius may find her highest inspirations and most rapturous solaces? Why should not there be a civilization of as high a type and more romantic than marked the old world; where poetry and art and song can grow side by side with a seemingly utilitarianism—a utilitarianism not hard and cold and all engrossed in money-making, but where time and opportunity are given for a sumptuous taste and a munificent, superb æstheticism to revel in; where the triumphs shall be of the poet's page, the painter's canvas, the sculptor's marble?

Florida will be studied in this aspect by him who seeks "a refuge from the vulgarity and irritation of business;" who recognizes the music of the "inner voice" in the river; who feels—

"A distant dearness in the hill,  
A secret sweetness in the stream."

To such, even the most rapturous rhapsody would need no apology; for there is a time for rhapsodies, as well as for plodding, groveling, gain-getting.

Suppose Florida were, in fact, only some "delicious land," where the—

"Graces, knit with the hours in rosy dance,  
Lead on perpetual spring."

Even then it would have its uses, as I have said. The *ennuied* millionaire, the overworked scholar, the professional man worn with a long life of toil, the tradesman—all who seek to get out of the hurly-burly, the dust and jostle of this feverish, work-a-day world, and find a respite from it, and who seek rest to the overstrung nerves and the jaded powers, will find a charm in Florida, a harmless but—

"Pleasing sorcery that charms the sense,  
And laps it in Elysium."

as did the song of the lady in "Comus." Therefore, if Florida were an Arcady, that

were enough. But Florida is not a fancy, but a fact. You see it, "not in the frenzy of a dreamer's eye," but as "a sober certainty of waking bliss." These indescribable lakes, these orange groves, copses of camellia, pittosporum, oleander, sweet olive, roses, viburnum, these bowers of live oak, magnolia, all this "wilderness of sweets," this wealth of shade and color and fragrance, are all real. "Fancy lags behind fact, the imagination becomes barren and uninventive" when one attempts the theme of description.

And, while there is no glory of time, no halo of history about Florida, none of that hallowing effect that endears decayed splendor and bathes it in the purple light of bygone centuries; while there is none of this prestige of age, this consecration of decadence, I cannot see why Florida should not prove a resuscitation of Spain in her palmy days, her "golden prime," when the latter furnished olives and olive oils, raisins, oranges, figs and other choice fruits, and the wondrous fabrics of her looms, to commerce. Florida may prove a repetition of these. Her silk and woolen and canning factories will spring up, and the wealth, splendors and sumptuous magnificence of her products will vie with those times, without their ignorance and superstition. She will prove of joy the sojourn, of sickness the asylum, of richest and most beautiful commerce the mart, the home of art, and the most fascinating scene in which to enjoy the *dolce far niente*. It surely ought to be a pride of patriotism, a solace to national pride, that if other lands have had their vales and mountains embalmed in song, we have our Florida, where one can revel in the rich bounties nature, unpersuaded, yields, and where immense rewards of beautiful luxuriance await those who will woo her tender responsiveness, with apposite cultivation. And, while we exult in our magnificent vastness of areas, our great rivers, our lofty mountains and fertile valleys, why may we not cherish the land of orange bowers; where the landscape is perpetually a flower, and ever redolent with myriad fragrances? And I love to think of the solid, enduring contributions to our future literature which the inspirations Florida will awaken shall yield. The imagination will not be cheated of its enchantments and the exalted sensibility of its opportunities. If the nightingale will sing on the heath, her temptation to sing will be none the less in a bower. If the lower slopes of Parnassus yield such inspiration, what will its "heaven-kissing" heights afford? Up there are the finer vistas, "the brighter ether, more purpureal gleams." So, if the prairie poet, with pig-sty odors haunting his sense, and with corn cribs and hogs in sight, with a kindled imagination, "bodies forth" groves of flowers and "blasts of balm" in his "fine frenzy," will not those susceptibilities be exalted and his fancy take higher flights, if he shall breathe the odors and pluck the fruit of orange groves, hear the songs of mocking birds, see—

"Fields ever fresh and groves forever green," and be intoxicated with odors undreamed of, exhaled from flowers always in bloom; where

"He sleeps and wakes in scented air;" where the spirit of fragrance is not only up with the day, but, like a fond, serenading lover, is abroad all the night? If a Milton glorifies the tame landscape—

"Russet lawns and fallows gray,  
Where the nibbling flocks do stray"—in his musical poem, what may not some future Milton do for the enameled fields of Florida?

And then I think one of the sweetest beauties of Florida is a subtle power of rejuvenation, that springs from some mystic source, we know not where or how; when the feelings of early youth revive, and of the days when we used to pluck the daisies, chase the butterflies, wade in the brook; when our tears were only of the eye and not the heart; when sorrow was as evanescent as an April shadow upon a glad some bird; the days of the "sunshine of the breast," when the "spirits flew in feathers;" when we were "blithesome and cumbersome," like Hogg's skylark, or as lightsome as the swallow, "chasing itself at its own wild will" over the glassy lake or flowery mead; the days ere care came or poverty (or if the latter, heeded not, in blissful compensations); the days ere the vanishment of loved ones, or ever the golden chalice of hope was broken, that used to be "brimmed with such delicious draughts of richest joy." Thankful are we for any "joyfont" whence we can quaff one fill of rapture from life's embittered cup—and that fountain, from the mystic somewhere, springs in Florida.



## MINING NOTES.

By T. K. BRUNER, Salisbury, N. C.

### GOLD HILL MINES.

Since Capt. Wm. Nance, the new superintendent, arrived from London, Gold Hill looks like another place. He came under the impression that he would have to make a new mine out of what the company had, and that it would take at least twelve months labor before sufficient ore could be produced to keep the 20-stamp mill going. He also thought that the water supply for amalgamation purposes would give him trouble, and that it would probably have to be brought a distance of four miles. This is not so, however, and he is much encouraged. The Randolph (740 foot shaft) having been let for sinking, they have found the big sulphur vein at the bottom to be from 4 to 10 feet thick. This ore was roasted and amalgamated, giving three-fourths of an ounce of gold per ton, and the concentrates, reduced five to one, give two and three-fourths of an ounce of gold to the ton. That is pay ore. Levels will be driven north from the 600-foot center shaft, and the ore milled. Eighteen hands are at work driving and stopping on the west vein, which will supply ore for running five stamps regularly. This ore is expected to mill five ounces of gold to the ton. The other 15 stamps will be kept at work on ore from the Randolph shaft and 600-foot level.

Scrap iron has been placed in the water at the discharge at the pump to the mill house, which precipitates the copper held in solution. When the plan has been completed it will render the water from the Randolph shaft as good as any that can be had for amalgamating purposes. Iron is also placed underground in the sump, and is already covered with copper precipitate. Condensers and other improvements are to be added, and it is expected soon to make a shipment of bullion. This will be a surprise to the London company, as no returns of bullion were expected under twelve months.

### THE MARION BULLION COMPANY.

This company are operating on a tract embracing fifteen hundred acres, adjoining the Vein Mountain Placer Mine, in McDowell county. It is a strong corporation, having a capital of half a million dollars. Hon. Thos. Edge, of Pennsylvania, is president, and Col. H. C. Demming, of Harrisburg, same State, is secretary and general manager. They are not only successful in their mining operations, but are making money. They have more than 20 miles of ditches, with a hydraulic capacity of over 6,000,000 gallons of water a day of ten hours. This large work, conducted on business principles and with commendable economy, is telling, as the regular golden returns show. But their operations are not confined to gold mining. They have a large force tunneling and otherwise exploring for mica. Some promising veins have been found, with favorable indications of producing marketable mica lower down.

They have recently discovered a large and apparently inexhaustible mass of true emery—i. e., corundum blended in proper proportion with oxide of iron. This emery is said to be of superior quality and in such abundance as to justify the erection of suitable works for preparing it for the trade. The company propose to do this at an early day.

Recently attention has been paid to the crystals often found there. Mr. Demming has been successful in his researches in this direction, finding some rare and beautiful gems, a few of which have not yet been determined. He has found one small diamond of good color and very brilliant. He has also found a ruby of rare depth of color and the required purity for gems. Several deep, clear emeralds have been found, while the paler tints of beryl are abundant. He has

enough of this mineral to cut 500 gems. They are pale sea-green and light sky-blue, and are exceedingly brilliant. They are the aquamarines of the jeweler. Probably the most striking specimens in his collection are a trio of very large and beautifully cut stones. The first is a nearly pure-white topaz, very lovely in its wealth of light; the second is a moonstone, or perhaps better known as "citrine" topaz, has a rich golden color; the third is a smoky amethyst, or what the Scotch call "cairngorm," of a rich chocolate brown color, and perfectly transparent. These gems approach the size of a silver half-dollar in circumference, and will weigh from 70 to 100 carats each.

### RANDOLPH COUNTY NOTES.

—The Winningham Mine has been sold to Capt. Fisher, of England; price not given.

—It is reported that the "Poplar Branch Mine" has gone into the hands of English purchasers.

—M. Hammond, of Bush Hill, has made a discovery of a large vein of auriferous sulphide ore which carries, in addition to gold, a percentage of copper. It is on the "Saw Mill" lands.

—A 5-stamp mill is running at Davis Mountain Mine.

directions. The foot-lever arrangements give a good leverage on the boring arbor, and the springs are so arranged as to impart a quick return and an easy motion—much more so than the usual counterweight. Altogether this machine possesses many advantages, which are clearly set forth in the full descriptive circular which the manufacturer, Frank H. Clement, No. 215 Mill street, Rochester, N. Y., will be pleased to send to all wood-workers who use such tools.

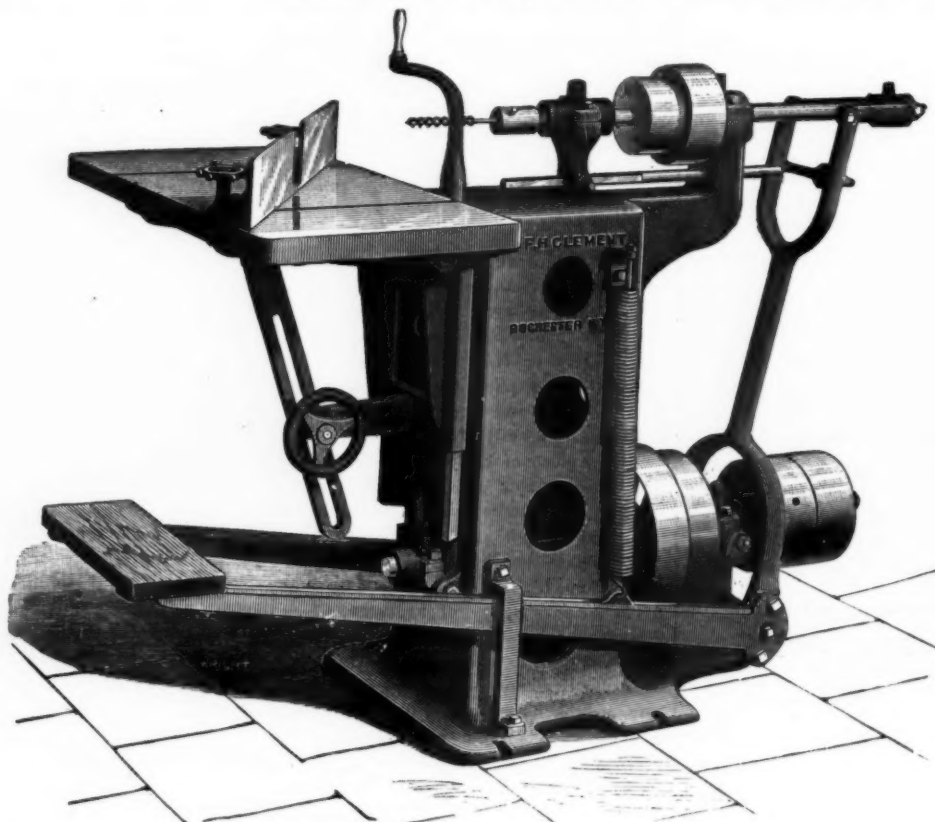
The same manufacturer also makes three other styles of boring machines, and has a variety of patterns for 2, 3, 4, 5 or more spindled borers for special work, on furniture, chairs, wagons, &c., &c., which he makes to order.

### The South's Awakening.

Slowly, toilfully, surely the great spider of progress—the railway—spins the web that is destined to catch the flies of a new prosperity for the South! Kansas City and Memphis on the one hand, Savannah and the cities of the American Mediterranean on the other, are being connected by the strands of steel that form the meshes of the web soon to cover the entire map of the section.

an hundred industries at this point. Trade, which, under the impetus of general activity throughout the section, shows signs of a happy revival, will become enlarged and diversified, and New Orleans will be rapidly prepared to play the important part in the commerce of the civilized world that has been cut out for her by Nature and Destiny, in connection with the opening of the Isthmus of Tehautepec.

In the larger towns of the East and North; in New York, Boston, Philadelphia, Chicago and other centers of population, the current talk is all of the South, and of its new capabilities, advantages and attractions! Thousands of the shrewdest capitalists, traders and skilled farmers on the other side of the Ohio, are reported to be looking this way with eager eyes. In the Eastern States there is more than interest—there is actual excitement—over the probability that with ores as good as the famous Lake Superior product, and coke now acknowledged to be the peer of Connellsville, this section must shortly take its place among the great steel-producing regions of the world. In the West, where the supply of native timber is growing scarce, and hence dear, there is the liveliest desire



NEW HORIZONTAL BORING MACHINE.

### New Horizontal Boring Machine.

There is no doubt but that the present tendency of the demand is toward better tools and machinery in nearly all wood-working shops that are worthy of the name. It is not many years since, in a large number of wood shops, almost anything that would make a hole, no matter how imperfectly, if it were only done by power, would answer for a boring machine. Now almost every shop requires a first-class independent borer which is always ready and can be adjusted to any ordinary range of work.

We illustrate on this page one of the latest of these tools, built by a maker of long experience, and who has a reputation for good work at reasonable prices. This machine is all iron and steel except the treadle-bar. All of the boring arbor journals are of steel, and the principal one is about double the length usual. The frame is cast in one piece, and the countershaft is swung in swivel-boxes. The table has a vertical adjustment of 10 inches on gibbed ways, and it may be tilted to an angle of 45° in either direction. The fence or table gauge is also adjustable either way to the same angle, so that work may be bored on a miter in both

And as the busy railway spiders go on spinning, the march of industrial progress moves down the Mississippi Valley, dropping here and there the vigorous nuclei of manufacturing communities, whose greatness in the not distant future is not a matter of idle conjecture, but a grand certainty.

In every direction, but with hardly an exception, on lines centering at New Orleans, this movement, born of the Expositions, goes steadily on! Where until lately the local centers of neighboring States were as remote places to us, the rapid extension of our railway system is bringing them to our very doors. At Birmingham the lines running to the Crescent City will this year find new connections with the cities of the Central West, and through them with the great Northwest and the Pacific slope. Coincidentally the discovery of Bessemer ores and manganese insures the Valley States a steel industry which, it does not require much thought to see, must find an outlet through the chief seaport of the New South.

Still other lines of railway, home and foreign, are pointing, or soon will point, their headlights towards the Southern metropolis, and all the conditions recited, combined, will tend to the establishment of

to get hold of and ship the rich hoards of pine and cypress that Louisiana and other of our States have in store; and everywhere, East, North and West, both in the States and the Dominion, the "Southern fever" among the well-to-do agricultural class is daily growing stronger. Capital, tired of interest too low to be called remunerative, at last lends a ready ear to the story of opportunities in the New South, and displays anxiety to hear all on the subject that can be presented. The people of the South need only to push the advantages of their present situation to reap a harvest in the way of extended production, trade and industry. Now is the time to reach out and advertise the many chances for effort and profit in our States, and not least in the Pelican State. All around us may be heard the tread of incoming workers and producers, and the cheery chink of incoming capital, to help those workers and producers to speedy and great results. We are not standing idly by while this is going on! Perhaps we are getting our share of the "boom," but we want more than our share! That is human nature, but it is also business! There is every encouragement to boom; let the people of New Orleans and Louisiana join the noble army of boomers! "There's millions in it!!"—New Orleans Times-Democrat.



### Tackle Blocks.

Contractors and others who use tackle blocks know the importance of having blocks that can be relied on to stand the strain put upon them. The giving away of a defective block, when used in hoisting heavy weights or in a vessel's rigging, may cause heavy damage to property and loss of life. The tackle blocks bearing the well-known "Star" brand have a world-wide reputation for strength and durability. They are manufactured by the Bagnall & Loud Block Co., Boston, Mass., which is one of the oldest houses in this line of business in the United



CAGE HAVING FIVE POSTS.

States, having been established in 1840. In the manufacture of their goods the best material obtainable is used, and every means adopted to secure strength and uniformity.

Among their specialties are their self-lubricating metaline blocks, which, for quick or heavy hoisting by steam power, have no superior. Their self-adjusting five-roll roller bush blocks give a greater purchase and are more durable than the ordinary patent roller blocks. They are very simple in construction, the rolls being solid with shoulders at each end. Their self-locking snatch blocks



SELF-ADJUSTING ROLLER BUSHING.

operate very quickly, the fastening being very simple. It has four straps to sustain the strain, being strapped both on the outside and inside, the straps being connected by a bolt at the bottom, which makes the block as rigid as if it were all made of iron.

Information in regard to these and other specialties of the Bagnall & Loud Block Co. may be had from their catalogue No. 5, which will be sent on application. They received the highest award for improvements on their blocks at the Mechanics Fair, Boston; the World's Exposition at New



SOLID ROLL WITH SHOULDER.

Orleans, and National Fisheries Exhibition, London, England.

The Bagnall & Loud Block Co. are furnishing many new yachts this season with their improved self-adjusting five-roll roller bush blocks, which are finished very handsomely and made out of a very handsome wood, and are highly praised by the many yachting men who have seen them. Among the new

yachts fitting out at present with these blocks are the sloop Atlantic, of New York, and Mayflower, of Boston, and others not yet named.

### The South—Its Future.

The South is manifestly on the eve of great prosperity, at least all of the South, unless it be two or three of the Gulf States where the race and labor questions stand in the way of diversifying the industries and developing the country.

Maryland, Virginia, West Virginia, North Carolina, Georgia, Alabama, Arkansas, Texas, Missouri, Kentucky and Tennessee are all in the line of promotion, and only a few years will make an immense change in these States. But Tennessee and Alabama, we predict, will far surpass all the others.

In these two States, with great advantages in the way of water power, timber, good land and a fine climate, as in the other States, there is a special feature which must attract capital and enterprise as no other portions of the United States will. The discovery was made by actual tests on a large scale, that the coal of the Cumberland mountains in Tennessee, and of the vast Warrior coal field of Alabama, is well suited for coking purposes and for making iron, and that the vast beds of iron ore in the same regions produce first-rate iron. This discovery, made by building furnaces and trying it, we say, has turned capital and enterprise in this direction in the last few years surprisingly.

A great fact can not be too often repeated, that here in Tennessee and Alabama are the only two places in the United States where a good article of coking coal and a good article of iron ore are found in the same neighborhood. The iron for the United States, up to this time, has been made with coal and ore which were several hundred miles apart. This fact, together with the great advantage in labor, made it a folly to undertake to make iron and compete with English iron, except by the incidental benefit derived from a duty or tax on imported iron.

With the South the question of the difference in labor still exists. But for the cheap labor of England we would make iron in Tennessee and Alabama as cheap as it is made in England. With a tariff as the present Morrison bill leaves it, on both iron and ore, which covers the difference in the price of wages, there can not be a doubt but that the coal and iron industries of the South are to be immense. Manifestly the North is realizing this as well as the South. The press of the North is discussing it. Enterprising men with capital are looking closely into it. They are making examinations of all our coal fields. They are looking into the workings of the furnace companies of the South.

The great fact that good coal land in Pennsylvania is worth from three hundred to five hundred dollars per acre, and in Tennessee and Alabama it can be bought for a few dollars an acre, and that this difference comes alone from the fact that one section up to a recent period had slave labor and the other had free labor, and that this cause of cheap mineral lands and lagging industries in the South is now removed—these facts, we say, now being discussed all over the North, together with the success in the making iron so as to put it successfully on the market in Boston, New York and Philadelphia, are waking up an interest among capitalists and stirring our own people to new exertions beyond anything expected in so short a time.

No man can look at the facts and doubt but that the manufacture of iron must be transferred from Pennsylvania to Tennessee and Alabama in the course of time. When, depends a great deal upon our own exertions.

There is no such inviting field for the investment of capital as the South, and capitalists in all parts of the country are coming to understand it.—Nashville (Tenn.) Union.

### A New Method for Treating Phosphate Rock.

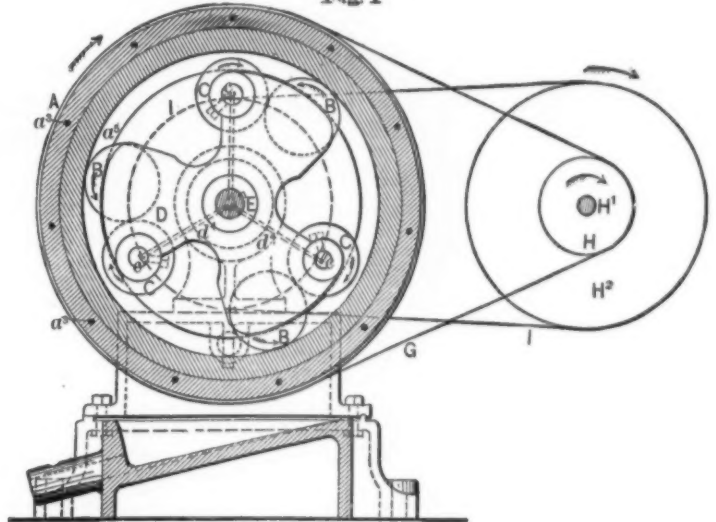
In the preparation of phosphate rock for the fertilizer market the great problem which manufacturers have hitherto had to deal with has been the economical pulverization of the hard rock.

We present in this issue an illustration of a new machine invented by engineer John B. Waring.

As superintendent of one of the large phosphate concerns in South Carolina, he had opportunity for familiarizing himself with the methods of treating the valuable material, of which that State is such a great

crushing action to steel rollers, actually weighing 2,000 lbs. (the centrifugal weight of the rollers in the pulverator), having a five-inch convex face, and rolling over a horizontal concave face steel track. The wear by this motion is reduced to a minimum. This will be readily seen from a look at the cuts. By the rotation of the outer chamber the material is held evenly distributed around the inner periphery of the concave steel ring lining this chamber. The crushing rollers have no mechanical axis, but merely roll over the material between them and the steel ring, exerting their centrifugal weight, as it is called; this "weight," of course, depending on the speed at which the rollers are pushed

Fig. 1

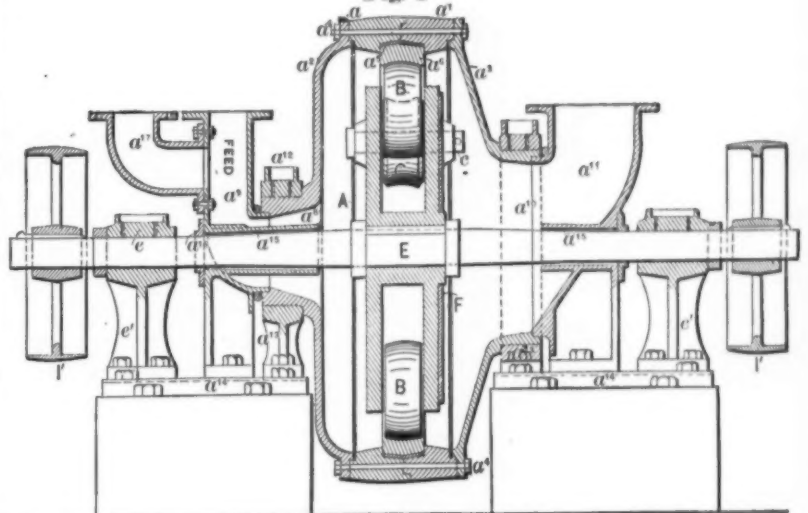


WARING'S PHOSPHATE MILL.

producer, and perceived, as others did, the need of proper machinery. Before designing the pulverizer which bears his name, he first made a careful study of the subject, to decide, first, as a question of mechanical economy at what point it ceased to be economical to crush the rock by heavy machinery, and then made a mill which would take the rock thus economically reduced in size and pulverize it to the required degree of fineness. This point he believed to be  $\frac{3}{4}$  inch screen, and has the breakers set to crush to that size. The rock leaves the Waring mill as finished product, pulverized to any degree of fineness, which may be

in their concave path. The pushing is done by rollers which are loosely journaled to a circular carrier, keyed to a shaft passing through the center of the chamber, so that in pushing against the rollers they rotate on their own axis. No crushing is done by these rollers, their only duty being to push the crushing rollers. A graphite bushing serves to lubricate the pins of the pushing rollers in the dry machine, being protected from dust and cooled by a current of air passing through the center shaft, and by radial passage ways entering the pins and escaping through an opening at the center of these pins, and then outward at each end,

Fig. 4



WARING'S PHOSPHATE MILL.

accurately regulated without the use of a screen. We have thought that manufacturers would be interested in studying the plans of Mr. Waring's invention, which we give herewith. It is not in the use of centrifugal for pulverizing that the inventor claims novelty, but in the character of the crushing force, which his ingenious use of the principle develops. The only friction to which the crushing parts are subject is what the books call rolling friction, which insures the least amount of wear. The pulverizing is neither by attrition nor grinding. The pulverizing rollers in the Waring Mill, of which there are three, may best be compared in

between the pins and the graphite bushings of the rollers. By this arrangement the wear on these pins is found to be an item too insignificant for consideration. It is said that the mill will last as long as any engine which may be used to drive it.

The pulverized product is removed from the mill by an induced air current. The material is held from the center with a force in proportion to the size or weight of the particles, the speed being uniform, and it consequently requires a certain force to remove a given size. These are in accordance with fixed mechanical laws, and the forces are easily measured. Where very delicate



separation of the finely pulverized material is required, a system of dust chambers is arranged which gives perfect results. The product leaving the mill at A11 is drawn by the current into two settling chambers, the second larger than the first, the force of the current being correspondingly reduced. The heavier product is deposited in the first chamber and the "floats" in the following. The air is returned into the mill at A17, having deposited all the material in the last settling chamber. Thus there is a constant circuit, and no material is lost or escapes into the room. Further information in regard to these mills may be had on application to Messrs. J. B. Waring & Sons, 106 and 108 Liberty street, New York City.

### West Virginia vs. Connellsville Coke.

In another column we give the melting figures of the foundry of the Pullman Car-wheel Works. We very much doubt if the results, 16 lbs. of iron to 1 lb. of coke, have ever before been reached in this country. The point of special interest is, this excellent work was reached in 'New River,' West Virginia, coke. The comments of the manager are most significant: "The coke used was 'New River,' a West Virginia article, and melts faster and hotter than Connellsville and costs less per ton and takes less per charge of iron." The purity of this coke has long been known, but it has always been held that in its mechanical structure it was inferior to the Connellsville, and hence with preconceived notions, not so valuable for either furnace or cupola practice. We want to place ourselves squarely on record now, that the Connellsville coke has a most formidable competitor, and that with the extension of the Ohio & Kanawha Railroad to the mouth of the Gauley River, connecting there with the Chesapeake & Ohio, and with the further development of the coke business in the field reached by the C. & O., the whole Southwest trade will be lost to Connellsville, and it will have hard work to hold its own in the Northwest.

Lower ash and sulphur is bound to tell in these days of close economies, and the Connellsville syndicate will discover that while they have been scheming in fancied security, a giant has been born that will before long, astonish them with his strength. —Iron Trade Review.

THE Breckenridge Company, Limited, has been formed with a capital stock of £500,000, 50,000, £10 each, and £75,000 of 8 per cent. mortgage debentures, for the purpose of acquiring the entire capital stock of the Cloverport Oil & Coal Company. This company owns property consisting of about 6,000 acres of land, of freehold tenure, situate in the counties of Breckenridge and Hancock, with mineral rights under a further and adjoining tract of land of about 1,600 acres. This property is about 9 miles from the town of Cloverport, Ky., which lies on the banks of the Ohio River. From this river to the property, a railroad has been constructed. At the river itself are the necessary landing stages. Upon the property is a seam of rich canal coal. The seam has been opened at various points by levels

running into the hillsides. Reports have been made by Mr. Rathbone, of the firm of Bainbridge, Seymour & Rathbone, of London.

INFORMATION is desired in regard to any plant of second-hand blast furnace machinery that may be for sale. Particulars may be sent to care of the editor of this paper.

OUR column of Business Chances will always be found of interest. It contains every week new advertisements of capital wanted or capital seeking investment, mill sites or mineral property for sale, openings for manufacturing enterprises, &c., &c.

### BEAUDRY'S UPRIGHT CUSHIONED



**Power Hammer,**  
BY FAR THE BEST!  
Blow accurate, powerful and elastic.  
Will increase the profits of any shop.  
70 Kilby St.,  
BOSTON, MASS.  
Beaudry & Cunningham.

### WANTED: A PARTNER In a Hardware Store

With about \$3,000, situated in a growing and healthy town in Virginia.

ADDRESS P. O. BOX 96,  
Baltimore, Md.

### FOR SALE.

Complete system Cotton Mill Machinery of 5,000 spindles almost as good as new; has been run only about three years. Prices and terms satisfactory; part payable in bonds of a good company. The advertiser can secure contracts for its entire production at remunerative prices for one year ahead.  
Address O. M. HARPER,  
Care J. H. Lane & Co.,  
No. 110 Worth St., New York.

### A Rare Opportunity.

WANTED—A good man with \$2,000 to take half interest in an established wholesale and retail hardware business in one of the most progressive manufacturing towns in Virginia. Only 2 stores in town of 8,000 people. Address LEVEL, care MANUFACTURERS' RECORD.

### FOR LEASE.

The Lexington Manufacturing Company, of Lexington, Va., wishes to lease for a term of years its Foundry, Boiler and Machine Shop, fronting 200 feet on side tracks of B. & O. and R. & A. Railroads. These shops are thoroughly equipped with ample (water) power, and are ready for occupancy and use without the expenditure of a dollar. It is a fine opportunity for capitalists who wish to engage in any character of iron manufacturing in the heart of the iron region of the James River Valley, of Virginia.  
Address

THE LEXINGTON MANUFACTURING CO.

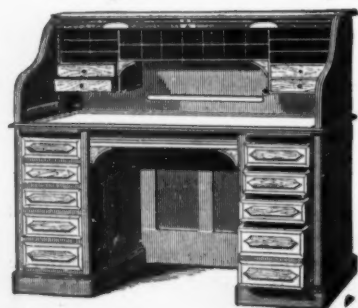
Lexington, Rockbridge Co., Va.

### ARCTIC ICE MACHINE MFG. CO.

Works, 4, 6, 8 & 10 West Street, Cleveland, O.

Manufacturers of Machines for Making Ice and for Refrigerating Breweries, Pork Houses and buildings of all kinds requiring a steady, low temperature. Over 100 of our machines now in use. Send for any particulars desired.  
P. O. Box 92, Cleveland, Ohio, or P. O. Box 348 Cincinnati, Ohio.

### Derby Roll Top AND Flat Top Desks



The BEST and CONSEQUENTLY the CHEAPEST OFFICE DESK IN THE WORLD.

**Derby & Kilmer Desk Co.,**  
Manufacturers.

OFFICE AND WAREHOUSES:

55 to 65 Charlestown St.,  
BOSTON, MASS.

Illustrated Catalogue on Application

ESTABLISHED 1860.  
**KREHL, HAUSER & CO.**

TANNERS OF

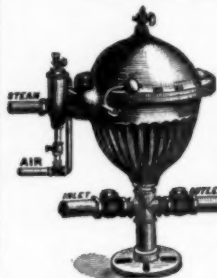
### OAK Leather.

ALSO MANUFACTURERS OF

### Leather Belting,

Girard, Trumbull Co., Ohio.

SPECIALTIES—Harness, Black and Fair Bridles, Line Leather, Saddle and Shoe Skirting, Russett and Stained Rein Welt, Fly-Net and Collar Leather. Superior Harness Backs. Write for prices.  
Mention this Paper.



### THE CURTIS

RETURN

### STEAM TRAP

For returning steam condensed under pressure automatically into the boiler, whether taken from above or below the boiler level, without loss or waste.

MANUFACTURED BY

### THE CURTIS REGULATOR CO.

158 BEVERLY ST., BOSTON, MASS.

—GENERAL AGENCIES:—

109 Liberty St., New York; No. 707 Market St., St. Louis; 14 S. Canal St., Chicago.

### TAPER-SLEEVE PULLEY WORKS,

No. 211 W. 12th Street,

ERIE, PA.

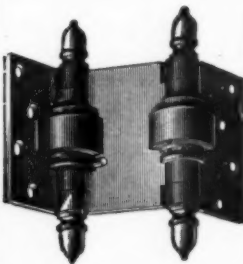
Manufacturers of Taper-Sleeve Wood Belt Pulleys, Adjustable Dead Pulleys, Friction-Clutch Pulleys, Friction



Clutch Couplings, Wood Pulleys in Halves, Taper-Sleeve and Compression Couplings, Shafting, Post and Drop Hangers.  
Correspondence Solicited.  
Friction-Clutch Pulley.

### DON'T BUY AN ENGINE OR BOILER

Until you have seen our circulars. Engines complete from \$250 for 15 to \$550 for 60 Horse Power. Boilers of every style. Automatic Engines for Electric Lights, Centrifugal Pumping Machinery for Drainage or Irrigation. Established 22 years. Perfect satisfaction guaranteed. Address for circulars, MORRIS MACHINE WORKS, Baldwinsville, N.Y.



UNION SPRING HINGES  
are simple, easily set, cannot be put on wrong. They work either way, right or left. All sizes. Single or double acting. For wire screens and other uses. Write for circulars and prices. L. W. JOHNSON, Sole Agent, 79 Chambers St., New York.

J. H. RATTERMANN,  
President.

F. G. DUERR, Vice President.

### The U.S. Varnish Co.

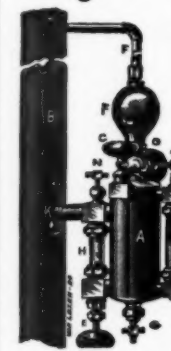
CINCINNATI, - - - OHIO.

258 and 260 Colerain Avenue.

CHICAGO BRANCH, - - No. 47 STATE STREET.  
Mention this paper.

ENGINEERS and STEAM USERS  
ATTENTION! The celebrated Cyclone Steam Flue Cleaners may be had at the Supply House of THOS. C. BASSHORE & CO., 28 Light Street, Baltimore Md.

### THE DETROIT Sight Feed Lubricators



Have revolutionized the system of oiling valves and cylinders of steam engines. The oil is delivered through the SIGHT FEED GLASS drop by drop into the steam pipe, lubricating perfectly all the parts from throttle valve down, effecting a sufficient saving in oil and wear of machinery to pay for the Lubricator several times a year. It costs nothing to try them, as one will be sent on thirty days trial to responsible parties, thus enabling a thorough test to be made before paying for the Lubricator. We refer to 20,000 users, including nearly all the leading railroads.

### CAUTION.

As these Lubricators are covered by patents owned solely by this Company, parties should order only the "DETROIT SIGHT FEED CURS," thus securing the best article and avoiding all legal complications. Liberal discount to the trade.

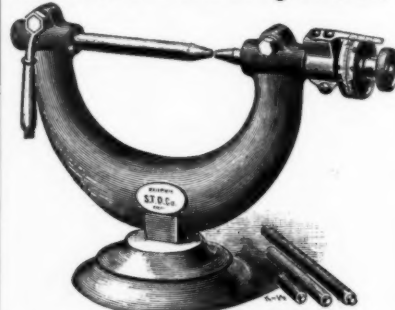
ADDRESS,

### DETROIT LUBRICATOR CO.

Office, 129 Griswold Street,

DETROIT, MICH.

### Sweet's Patent Measuring Machine.



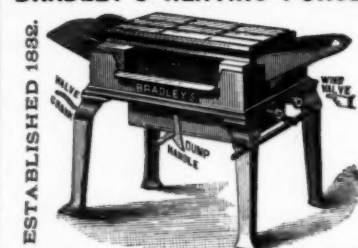
Measuring Screw 10, 16 or 20 Threads to the inch, graduated to read thousandths or 32ds without calculation.

IT WILL PAY YOU TO USE THIS MACHINE Upon COMMON WORK for the TIME it will save. Upon FINE WORK for the ACCURACY it will secure. It is the only Micrometer that will not lose its accuracy by use.

We will send one of these machines to reliable parties on trial. Those who use it would not be without one for many times its cost. Address,

SYRACUSE TWIST DRILL CO., Syracuse, N. Y.

### BRADLEY'S HEATING FORGES.



For Hard Coal or Coke. Indispensable in all shops to keep Bradley's Cushioned Hammers and men fully employed and reduces cost of production.  
**BRADLEY & CO. Syracuse, N.Y.**

### IMPORTANT!

THE STANDARD WATCHMAN'S CLOCK  
20 PRIZE MEDALS AWARDED  
FOR 12 STATIONS COMPLETE PRICE \$50.00  
THE BEST IN THE MARKET  
IF NOT SATISFACTORY RETURN GOODS AT MY EXPENSE  
SEND FOR CIRCULAR  
O. E. HAUSBURG  
71 NASSAU ST. N.Y.

### McShane & Bell Foundry

Fine Iron and Brass Castings Made to Order.



Manufacture those celebrated Bells for Tower Clocks, Court-Houses, Cotton Mills, Factories, &c. Prices and catalogues sent free. Address  
**H. McSHANE & CO.**  
Baltimore, Md.  
Mention this Paper.



## Business Chances.

**For the purpose of making the MANUFACTURERS' RECORD a still more valuable medium of communication between its readers North and South, we will publish, FREE OF CHARGE, short advertisements, not exceeding 40 words, from those in the South who have good business openings that they wish to bring to public notice, capital wanted for industrial enterprises, &c., &c.; while readers in other sections who desire to engage in manufactures at the South are also invited to use these columns, without cost, either in seeking information regarding the advantages and special claims of different localities, or for asking about good openings for men and money. This department is also free for Southern manufacturers who wish to advertise for mill managers, superintendents, engineers, &c.**

**In corresponding with any of these advertisers please mention the Baltimore Manufacturers' Record. Parties advertising in this column must have replies sent to their own address, and not to care of Manufacturers' Record, unless stamps are sent for forwarding replies. Advertisements sent not in accordance with this requirement will not be inserted.**

**WANTED.**—Pattern Maker and Draftsman, with two or three thousand dollars, to take an interest in an established engine, saw mill and boiler works, to work under salary. The entire plant is new; equipped with the best tools; has been in operation two years. Located in a fine Southern city of ten thousand inhabitants, has the best of prospects for future business. Machine shop, foundry and boiler shop operated by practical men, who are stockholders and all workers. Reference required and given. For further particulars address N. S., care of Baltimore Manufacturers' Record, Baltimore, Md.

**A SKILLED** Manufacturer of boots and shoes and of saddles and harness, can learn of a good opening by addressing William Allen, Glen Rose, Texas.

**CAPTAIN J. J. FARR** and other citizens of Glen Rose, Texas, will offer great inducements to a live, thorough, progressive educator, who will establish and conduct a high grade institution at that place.

**Mr. MART MARTIN** and other responsible citizens of Glen Rose, Texas, will form a partnership with an experienced distiller for the purpose of running a United States distillery in Somerville county.

**WANTED.**—A partner who is skilled in the manufacture of cedar in its various forms. Send estimate of cost of necessary machinery to be run by water. Address, James U. Vincent, Glen Rose, Texas.

**A PRACTICAL MAN** has money to invest along with some local capital in building and operating an ice factory in any good locality in the South. Would like to receive information as to places where there is an opening. Address, Bristol, care of Manufacturers' Record.

**SITUATION** wanted by a practical machinist, engineer, sawyer and saw filer. Address, J. B. Thomas, Melsom, Ga.

**IRON FURNACE FOR SALE.**—One of the most desirable charcoal furnaces in Virginia, located in Wythe county, will be sold on liberal terms; abundance of fine ores, water and timber. Address J. A. Waker, Wytheville, Va.

**WANTED.**—A purchaser for fine grass and fruit farm in the most beautiful and fertile portion of the "French Broad" valley, Transylvania county, half mile from town of Brevard, N. C. Climate unexcelled; mountain scenery grand; good frame dwelling and necessary outbuildings; orchard contains 2,000 apple trees and other fruits. Address S. E. Lucas, Brevard, N. C.

**PARTNER** in furniture factory wanted; a well-equipped small factory in successful operation; healthy town; cheap living; plenty of raw material at very low prices; good freight rates; good schools and society; capital required from \$1,500 to \$3,000; a rare chance. Address J. C. Mansfield, Athens, Tenn.

**WANTED.**—A competent machinist who is qualified to conduct a foundry and machine shop, and comes well recommended; can purchase an interest in a well-established business at a bargain and secure constant employment. For particulars address F. B. Alexander, Hickory, N. C.

**WANTED.**—An experienced man, with some capital, to operate an established foundry and machine shop that has done a prosperous business. The present proprietor is too old to manage it as desired. Address J. A. Smith, Gulf, care of J. T. Patrick, Raleigh, N. C.

**AN ACTIVE Young Man**, with some capital to invest can obtain a paying interest with position in a mining machinery business. One having practical technical knowledge or a graduate of a school of mines preferred. Address, with reference, V. W., care of Manufacturers' Record.

**WANTED.**—To sell an old-established, prosperous, Democratic newspaper and printing business, in a beautiful and growing county-seat and railroad town of Texas, not very far from Austin; official paper of city and county. Address Editor, care of Manufacturers' Record.

**WANTED.**—A practical experienced man to engage in some manufacturing enterprise that he may suggest, such as foundry and machine shop, brick tile manufacturing, or any paying enterprise. The location and some capital will be furnished to experienced man with capital. For information address J. M. Haden, Salisbury, care of J. T. Patrick, Raleigh, N. C.

**FOR SALE.**—One-fourth or entire interest in a pottery on the line of the C. & A. R. R., near Aiken, S. C. Eleven hundred acres in tract, unfailing stream of water, inexhaustible supply and great variety of the finest clays (Havlin). Plant complete and investment paying; more money needed to increase output to meet orders. Opportunity of investment to practical potter or one understanding the business unsurpassed. Address James G. Holmes, 60 Buchanan's Wharf, Baltimore, Md.

**WANTED.**—Parties seeking oyster farms, early fruit or truck farms, for canning or other purposes, or those looking for any kind of business investment in Maryland, Virginia, Georgia or Florida, to address I. D. Barton, 4 Courtland st., Baltimore, Md.

**WANTED.**—A partner with \$2,000 to engage in a thriving coopership business in a section that has considerable timber in it, which can be purchased at very low prices. Address W. D. Sprague, Old Fort, care of J. T. Patrick, Raleigh, N. C.

**WANTED.**—To correspond with capitalists in reference to the building of an important railroad link of 20 miles, uniting two main trunk lines and developing valuable resources. Eight miles already graded. Piers and abutments built across a river. Charter and right of way will be transferred free to party or company who will complete the connection. Address A. F. Naff, Greenville, Tenn.

**WANTED.**—A Partner with some capital to engage in the shoe business in Raleigh, N. C. Present proprietors desirous of enlarging their operations. They have control of the State convicts, which can be used to advantage in manufacturing shoes. Address, Shoe Manufacturer, care of J. T. Patrick, Raleigh, N. C.

**PATENT RIGHT FOR SALE OR TRADE.**—Valuable patent for releasing runaway horses from vehicles; a life-saving appliance. Money in it if properly pushed. State, county or town rights for sale, or will trade. Address F. Binford, Box 82, Owensboro, Ky.

**WANTED.**—Capital to invest in a hotel, where a guarantee of 10 per cent. will be given for five or ten years on money invested. Address J. T. Patrick, Commissioner Immigration, Raleigh, N. C.

**PARTNER WANTED** in a furniture factory in the South to travel; capital required \$5,000 or \$6,000; business already established; fine opportunity. Address Furniture, care of Manufacturers' Record.

**FOR SALE.**—My mill burnt down January 29, 1896, and not having capital enough to rebuild, am desirous to sell the site. It is an excellent water power; good dam; good wheat section; pleasant neighborhood; water-wheels are good and new. For further particulars address C. Lehman, Leitersburg, Washington Co., Md.

**SITE and Water Power** Free to a woolen, cotton or other manufacturing in one of the largest towns in Texas. There is also a fine opening for a cotton compress. Address, J. Jukes, 603 Avenue B, San Antonio, Texas.

**I WISH** to sell Seven Thousand Acres Finest Woodlands in the South. Woods comprise countless thousands of White, Post, Red and other oaks, Hickory, Pine, Ash, Cypress, Maple, Gum, Walnut, Sycamore, etc., etc. Want mill men and lumber merchants throughout the United States to communicate with me at once. E. B. C. Cash, Cash's Depot, S. C.

**WANTED.**—To learn of a good opening for the establishment of a large saw mill in Eastern Tennessee or Western North Carolina, where there will be abundance of timber for several years' work, and near transportation. H. F. Burt, Elizabethton, Tenn.

**WANTED.**—A practical man with \$500 to \$1,000, to take half interest in an established wagon and plow manufacturing establishment in a thriving village of North Carolina—a railroad center. Address Wagon and Plow, care of J. T. Patrick, Commissioner Immigration, Raleigh, N. C.

**WANTED.**—A partner to engage in the mercantile and manufacturing business; the mercantile department has already been established; manufacture of tobacco desired; not a factory in the county; large amount of tobacco raised; splendid opening for a factory on a small scale; will require about \$2,000 to take half interest; house rent only \$60 per year—two-story house; top of building can be used for a tobacco factory; railroad will soon run to town; grading already done and cross-ties ready to be put down. Address for information E. L. Hendericks, Taylorsville, care of J. T. Patrick, Raleigh, N. C.

**WANTED.**—A partner with \$2,000 capital in a handle factory, now established with good trade; have a good water power. Timber very cheap and location good. Address G. W. Simpson, Salisbury Furnace, Botetourt county, Va.

**A GOOD CHANCE FOR INVESTMENT.**—A daily and weekly newspaper in one of the most progressive manufacturing towns in the "New South" is offered for sale at a bargain. An excellent chance for the right man to make money. Very little capital required. Satisfactory reasons given for wanting to sell. Apply to Milton A. Smith, Anniston, Ala.

**FOR SALE.**—A furniture and mattress factory, with steam engine and machinery complete for both departments. Labor and materials cheap. Suitable factory and warehouses, with good dwelling-house, two wells of excellent water and out-buildings on the premises. The owner is getting old and is in feeble health and wants to retire. For particulars and price apply to John Wilson, Statesville, N. C.

**WANTED.**—A partner, with capital from eight to twelve thousand dollars, to take half interest in a wool manufacturing establishment, water power so close strong, in a healthy and desirable location in North Carolina—the Piedmont section. For further information address Thos. Parker, Waco, care of J. T. Patrick, Raleigh, N. C.

**THE Talladega Oil Mill & Public Ginnery** is offered for sale, or would form a stock company for manufacture of fertilizers and soap. Correspondence solicited. W. E. Yancey, Talladega, Ala.

**VALUABLE COAL PROPERTY FOR LEASE** in Montgomery county, Va., two miles from railroad. Address Chas. C. Kasey, New River Depot, Va.

**WANTED.**—A reliable man with \$1,500 cash, to engage in a lucrative business, in a great business center in the South. Address Energy, care of Manufacturers' Record, Baltimore.

**WANTED.**—A partner in an established and paying planing mill, sash, door and blind factory, in a central and thriving city. Address Goldsboro Rice and Planing Mill, care of J. T. Patrick, Raleigh, N. C.

**FOR SALE.**—1 Ring Twister, 8 Patent Twisters with spools, shafting, pulleys and belting, for making patent seine twine from 9 to 36 thread. Part of the machinery run less than two months. Will be sold for half its value. Address, Gillette Twine Co., Mount Verd, Tenn.

**WANTED.**—To sell a newspaper outfit very cheap. Also want to know of some locality desiring a weekly newspaper. Address, E. S. J., P. O. Box 91, Pulaski, Tenn.

**WANTED.**—A party with small amount of capital to join in starting manufacturing of knit goods with Lamb or some other good, low-priced knitting machine. To the right party understanding the business a location will be furnished; also a nice building lot for a home given. Address A. F. Naff, Greenville, Tenn.

## Get the Best at First.

The Holyoke Machine Company, of Worcester, Massachusetts, advertise in this issue their well-known Hercules Water Wheel. This wheel has many points of merit that strongly commend it to the attention of those who use water power. The most thorough tests have demonstrated its many good qualities. In Holyoke it is the standard water wheel, the aggregate horse power of the Hercules wheels in operation there being greater than that of all other wheels combined. These wheels are very popular in the South as well as in the North, having been in use for many years in a large number of Southern mills.

There are four of the Hercules wheels now in operation in the big cotton mills of the Eagle & Phenix Manufacturing Co., Columbus, Ga., and Mr. John Hill, of that company, in writing, Feb. 25, 1895, to the Holyoke Machine Co., said: "Within the past four years I have ordered four Hercules wheels, all of which have given the purchasers entire satisfaction. Three of the wheels are on regular duty in the Eagle & Phenix Mills. The first wheel ordered did so well that a 'Hercules' wheel has been added each time a new wheel was wanted. In the Eagle & Phenix Mills I supervise twenty water wheels of six different styles. The 'Hercules' is by far the most durable and best made wheel in use here, and, in fact, I know of no wheel its equal mechanically. It is all that can be desired in economy of water. In fact, is a strictly first-class wheel in every way, and the wheel to buy, use and depend upon."

That is a pretty strong letter, but it is only a sample of letters received by the manufacturer of this wheel. Among the recent shipment of wheels have been two—one a 54-inch and one of 60-inch—to a Georgia cotton mill. Two Hercules wheels are being put in at Natick Cotton Mill, and one at the Arctic Mill of B. B. & R. Knight near Providence. This will make eleven wheels furnished to this well-known firm, one of the most prominent in the manufacturing line in New England. Hercules wheels are sold in England, Ireland and Scotland, and on the Continent, a cable order having been received only a few days ago for one to go to France. The manufacturers say: "The Hercules gives the most power for its size and the highest average percentage from full to one-half gate of any wheel ever made." Their advice to all users of water wheels is to "get the best at first." If you are interested in water wheels, if you want a new wheel or a larger wheel, or a better wheel than you are using, write to the Holyoke Machine Co., Worcester, Mass., for catalogue No. 3.

Established 1867.

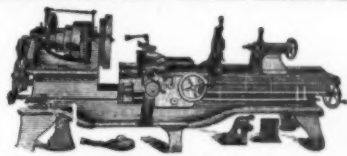
**E. HARRINGTON, SON & CO.**

WORKS AND OFFICE,

Cor. N. 15th Street & Penna. Ave., Philadelphia.

Manufacturers of Patent Extension

**LATHES**



Iron Planers, Boring Mills, Drills,

And a variety of other MACHINISTS' TOOLS.

Patent Double Chain Screw Pulley Blocks, unrivalled for durability, safety and power.  
Patent Double Chain Quick Lift Hoists, with Brake for quick and easy lowering.

REPRESENTED BY

J. Q. MAYNARD, 12 Cortlandt St., New York.  
C. E. KIMBALL, 93 Oliver Street, Boston, Mass.  
W. H. RICEY, 116 Main St., Cincinnati, Ohio.  
Circulars furnished.

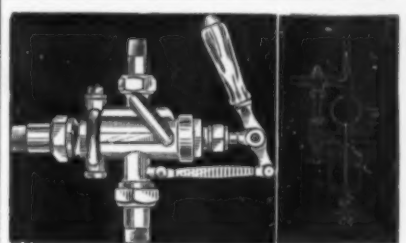
**METAL-WORKING MACHINERY,**

New and Second Hand, on Hand.

12 in. S. x 5 ft. Engine Lathes.  
15 in. S. x 6 ft. Engine Lathes, Lathe & Morse.  
16 in. S. x 6 & 8 ft. Engine Lathes, Harrington & Ames.  
17 in. S. x 7 & 8 ft. Engine Lathes, Hewes & Phillips.  
18 in. S. x 8 & 10 ft. Engine Lathes, New Haven.  
20 in. S. x 8, 10 & 14 ft. Engine Lathes, Harris & Ames.  
24 in. S. x 14 & 20 ft. Engine Lathes, Ames.  
25 in. S. 10 ft. Engine Lathes.  
26 in. S. x 16 ft. Engine Lathes, Perkins.  
41 in. S. x 18 ft. Engine Lathes, Putnam.  
50 in. in Gap Extension Bed Engine Lathes, Box.  
12 in. Stroke Shapers, New Haven & Eungst.  
15 in. Stroke Shapers, Wolcott & Eberhardt.  
20 in. Stroke Shapers, Eberhardt.  
24 in. Stroke Shapers, Bridgeport.  
20 in. x 20 in. x 4 ft. Planer, New Haven.  
20 in. x 20 in. x 6 ft. Planer, Whitcomb.  
20 in. x 20 in. x 6 ft. Planer, Pratt & Whitney.  
22 in. x 22 in. x 4 ft. Planer, Powell.  
22 in. x 22 in. x 5 ft. Planer, Ames.  
24 in. x 24 in. x 4 ft. Planer, Ferris & Miles.  
24 in. x 24 in. x 6 ft. Planer, Powell.  
24 in. x 27 in. x 7 ft. Planer, Ames.  
26 in. x 26 in. x 6 ft. Planer, Powell.  
26 in. x 26 in. x 6 ft. Planer, Putnam.  
30 in. x 30 in. x 10 ft. Planer, National.  
20 in. Swing Drill, Prentice.  
25 in. Swing Drill, Blaisdell.  
28 in. Swing Drill, Blaisdell.  
3 and 4 Spindle Drill, Garvin.  
Brown & Sharpe Universal Miller.  
Plain Miller, Lincoln Pattern.  
No. 3 Miller, Garvin.  
No. 5 Miller, Brainerd.  
24 in. Cutting-off Machine, Pratt & Whitney.  
No. 2-34-4 Stiles Punch Presses.  
Also a line of New Tools all kinds. We are always glad to correspond, and if parties desiring to purchase will write, stating just what they want, we will be glad to name prices on either new or second hand.

**E. P. BULLARD,**

No. 14 Dey Street, New York.



**Buckeye \* Injectors,**

—Lubricators, Wrenches, Etc.—

For circulars address **CROSBY, BURTON & CO.**  
204 Lake St., Chicago, Ills.

**\$250 WILL BUY**



**THE BEST SAW MILL**

Yet offered for the money.

SEND FOR CIRCULAR.

**RICHMOND MACHINE WORKS,**  
RICHMOND, INDIANA.

The Hardware Trade Should Sell the

**\$5 Ligowsky-Mueller Trap No. 7**  
with "TEIPEL ARM" for TONGUELESS  
**LIGOWSKY** "Clay Pigeons, No. 2."  
**C.P.CO.** Cin'ti, O.

**Reliance Alarm Gauges.**

The only combined High and Low Water Alarms in Existence.

Marvelously simple, and simply perfect. Obviate explosions, burning of flues, overflows, etc. A low gauge of water can be run with perfect safety, thereby securing better steam and saving fuel. Chamber at bottom catches all sediment. Nothing to get out of order. Never fails to give alarm. Send for illustrated price list.

**WRIGHT, BERGER & CO.,**  
Sole Proprietors and Manufacturers,  
Cleveland, O.



Adapted for Warehouses, Stores, Factories, Hotels. Public Institutions, and every place where merchandise, &c., is transferred from one story to another.

**JAMES BATES, Patentee,**  
Nos. 1 3 & 5 President Street. BALTIMORE.

**TOOLS**  
TAPS & DIES  
VISES  
CHUCKS  
STILLS  
SCREWS  
FINCHES  
LATHES  
FILES  
STEEL  
STOCKS

TOOLS for Machinists, Amateurs, Jewellers, Model Makers, Blacksmiths, Carpenters, Coachmakers, etc. Send 25 cts. for new Metal Worker's Catalogue, 300 Pages. Wood Worker's Catalogue free.

**FALLMAN & McFADDEN, Philadelphia, Pa.**

**ENGRAVING DIRECT FROM PHOTOGRAPH.**  
NO DRAWING REQUIRED.

**NO HAND WORK NECESSARY.**

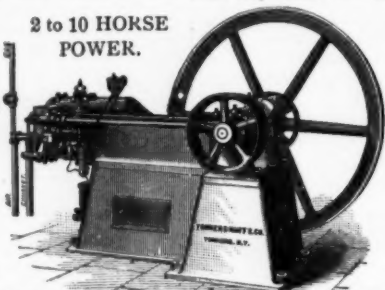
SEND COPY **CHEAP, ARTISTIC**  
FOR ESTIMATE **CROSSCUP & WEST ENG. CO.**  
307 FILBERT ST. PHILA. PA.



# PARKER GAS AND GASOLINE ENGINE.

Guaranteed to Run with Less Gas than Any Other Gas Engine Known.

Always Ready  
to Start.  
Lighted by Electric  
Spark.  
Simple.  
Durable.  
Effective.



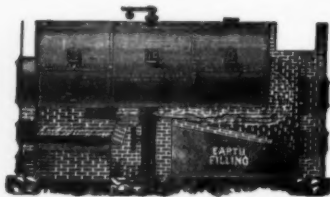
No Boiler.  
No Coal.  
No Ashes to  
be Removed.  
No Chimney.  
No Engineer.  
No Smoke.  
No Smell.

No Slide Valve to Get Out of Order. Does Not Hazard Insurance.  
No Small Parts to Clog Up. Is Noiseless in Running.  
Requires no Matches to Ignite the Gas. Can be Run with Any Kind of Gas.  
It is the only Engine that can be run equally as well with Gasoline Gas or Carburetted Air, as with regular  
fixed gas. Speed can be adjusted while running from 80 to 300 revolutions per minute.

YONKERS MFG. CO. SOLE PROPRIETOR AND BUILDER.  
Salesroom, 16 Dey St., New York.  
SEND FOR ILLUSTRATED CIRCULAR AND PRICE-LIST.

## JARVIS PATENT FURNACE

### FOR SETTING STEAM BOILERS.



Economy of Fuel, with increased capacity of Steam Power. Like the Siemens Process of Making Steel, it utilizes the waste gases with hot air on top of the fire. Will burn all kinds of waste fuel without a blast, including Slack Coal, Sawdust, Logwood Chips, &c. Send for Circulars.

Jarvis Engineering Co.,

A. F. UPTON, Treas. and Gen'l Manager,

61 Oliver St., Boston, Mass.

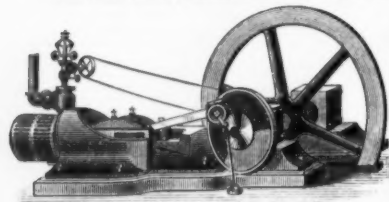
JOSHUA C. COE, Agent for Maryland and Virginia,  
O'Donald's Wharf, Baltimore, Md.

#### SOUTHERN REFERENCES:

Eagle & Phenix Mfg. Company, Columbus, Ga.  
Anniston Mfg. Co., Anniston Ala.  
J. P. King Mfg. Co., Augusta, Ga.  
Rose Mining Co., Charleston, S. C.  
Maryland Pavement Co., Baltimore, Md.  
Brush Electric Light Co., Baltimore, Md.  
Ettrick, Matoca and Battersea Mfg. Co's.,  
Petersburg, Va.  
Rasin Fertilizing Co., Baltimore, Md.  
Tanner & Delaney Engine Co., Richmond, Va.  
Sibley Mills, Augusta, Ga.

Graniteville Mfg. Co., Graniteville, S. C.  
Charleston Bagging Co., Charleston, S. C.  
P. H. Mayo & Bros., Richmond, Va.  
Phosphate Mining Co., Beaufort, S. C.  
Brush Swan Electric Light Co., Norfolk, Va.  
Columbus Ice & Refrigerator Co., Colum-  
bus, Ga.  
Lenoir Manufacturing Co., Lenoir, East  
Tennessee.  
Vanceuse Mill, Graniteville, S. C.

## HAMILTON WORKS.



WILLIAM TOD & CO.

YOUNGSTOWN, OHIO,

SOLE BUILDERS OF THE

PORTER-HAMILTON ENGINE

50 to 500 Horse-Power. Modern design. PLAIN, STRONG, EFFECTIVE, ECONOMICAL.  
COSTS LESS THAN ANY OTHER FIRST-CLASS ENGINE. Send for Photograph.

**BLAST FURNACE ENGINES ON HAND.**

ALSO A STOCK OF OTHER ENGINES (our make.) Prices and description on application.

FOR THE LOWEST-PRICED FIRST-CLASS

## Engines & Boilers

ADDRESS

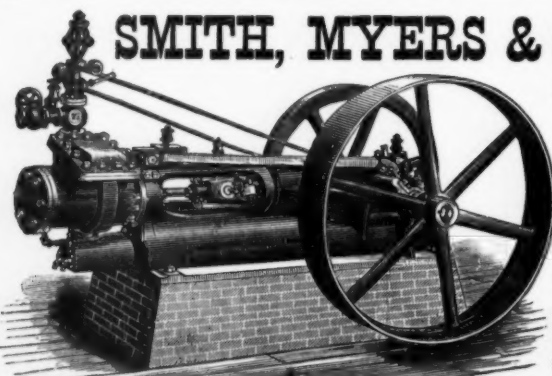
GEO. W. TIFFT, SONS & CO.

Buffalo, N. Y.

5 to 500 H. P. Special stock sizes 5 to 50 H. P., both Sta-  
tionary and Semi-Portable.

CORRESPONDENCE SOLICITED.

MENTION THIS PAPER.



SMITH, MYERS & SCHNIER,

402 to 412 W. Front Street,  
CINCINNATI, O.

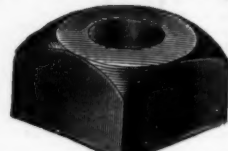
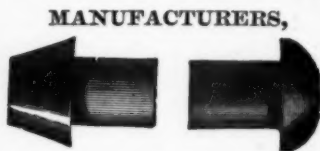
MANUFACTURERS OF  
PATENT TERRAPIN  
CENTRE CRANK  
ENGINES,

from 15 to 300 Horse Power.  
BOILERS AND  
SAW MILL MACHINERY.

Send for Illustrated Catalogue  
and prices.

## HOOPES & TOWNSEND,

MANUFACTURERS,



KEYSTONE BOILER RIVETS,

Cold Punched, Chamfered, Trimmed and  
Drilled Square and Hexagon Nuts.

Finished and Case-Hardened Steel Hexagon Nuts.

BRIDGE RODS and RIVETS.

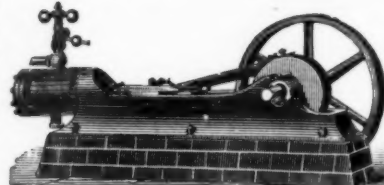
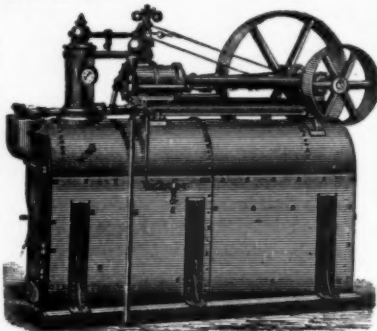
BUILDERS' IRON WORK.

TANK and COOPERS' RIVETS.

PHILADELPHIA, PA.

## SKINNER ENGINE CO. ERIE, PA.

Awarded THREE GOLD MEDALS  
by the World's Industrial and Cot-  
ton Centennial Exposition of New  
Orleans, La.



PORTABLE and STATIONARY  
ENGINES and BOILERS

More than 2000 in Use.

Send for Illustrated Cata-  
logue and Prices.

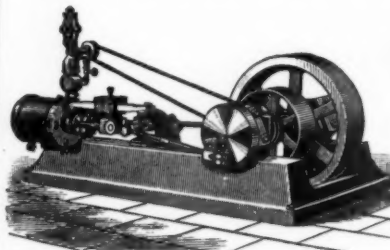
## "L" STATIONARY ENGINE

MANUFACTURED BY THE

Lidgerwood & Mfg. Co.

96 LIBERTY STREET, NEW YORK.

WORKS, BROOKLYN.



A simple, compact, thoroughly well made,  
quick running, self-contained

STATIONARY ENGINE,

Specially adapted for ELECTRIC LIGHTING, &c.  
Send for Circular.

HOISTING ENGINES A SPECIALTY. ALSO, BOILERS.

## The STANDARD STEEL WORKS

Locomotive and Car Wheel

TIRES

Manufactured from

OTIS STEEL.

Office, 220 S. Fourth Street,  
PHILADELPHIA, PA.

Representatives:

J. H. BELCHER, Room 24, Astor House  
Offices, New York City.

JOHN HEARNY & CO., Church & Rec-  
tor Streets, New York City, N. Y.

MORTON, REED & CO., Baltimore, Md.

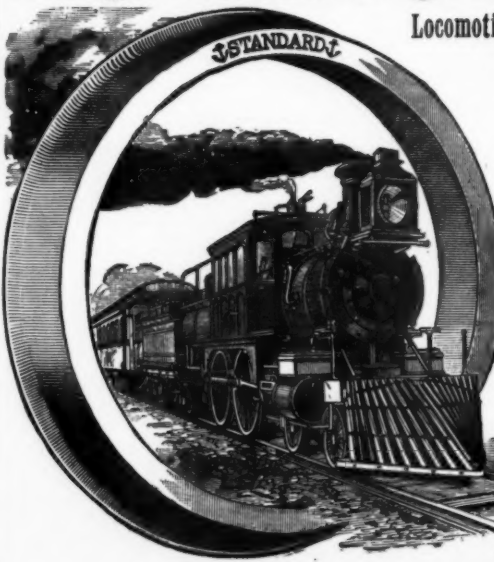
HUBBERT & HUBBERT, 428 W. Main  
Street, Louisville, Ky.

GEO. KINNEY & CO., 123 Central  
Ave., Cincinnati, O.

ANDREW WARREN, 707 N. 2d St.,  
St. Louis, Mo.

J. S. BREWER, 156 Lake St., Chicago.

M. L. LEACH, 30 Oliver St., Boston,  
Mass.





# Stilwell's Patent Lime Extracting HEATER AND FILTER Combined.

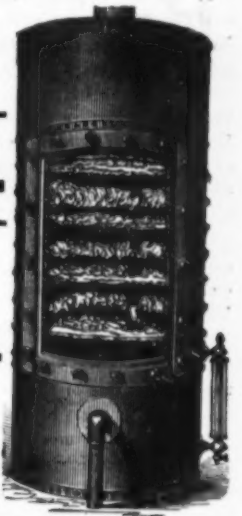
The Only Lime Extracting Heater That Will Prevent Scale in Steam Boilers.

Removing all impurities from the water before it enters the boiler.

Thoroughly Tested. Over 3,000 of Them in Daily Use.

This cut is a facsimile of the appearance of a No. 5 Heater at work on ordinary lime water, when the door was removed after the Heater had been running two weeks. Illustrated Catalogue Free.

STILWELL & BIERCE MFG. CO., DAYTON, O.



## THE Monongahela HOUSE,

PITTSBURGH, PA.

STRICTLY FIRST GLASS.  
MOST CONVENIENT TO

Depots, Manufacturing and Business Portion  
—of the City.—

"THE MONONGAHELA" is the Favorite Hotel for  
Southern Manufacturers and Railroad Men.

G. S. GRISCOM, Proprietor.

J. E. H. KELLEY, Manager.

### SAM. F. HARLAN,

LOUISVILLE STEAM PUMP WORKS.

#### Harlan's Improved Tube Well Pumps

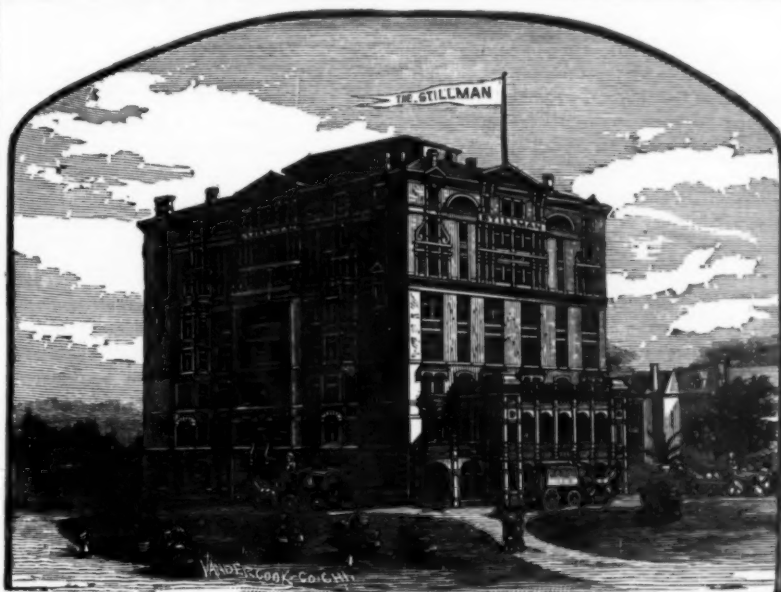
Combined with the famous Cook Strainer,  
for Manufacturers and Private Use.

All kinds of Pumps Repaired, also, Black-  
smithing and General Jobbing Shop, Awnings,  
&c. Cistern and Well Pump Manufactory.

921 W. Jefferson St., LOUISVILLE, Ky.

### BERNHARD DIETZ, Manufacturer of Printers' Rollers,

and Roller Composition. Factory, cor. Light and  
Mercer streets, Baltimore. Prices: Composition,  
(bulk) 30 cents per lb.; for Casting, also, 30 cents per  
lb. Orders by Mail promptly attended to.



## The Stillman

THE ELEGANT NEW

Palace Hotel  
OF CLEVELAND, O.

Situated on Euclid Ave.  
Fine Surroundings.

Strictly Fire Proof.

Incandescent Lights Throughout.

THE STILLMAN is only three squares from the Post  
Office, and near the business portion of the city. In  
modern elegance, appointments, and cuisine, it is un-  
surpassed, and is the equal of the finest hotels in the  
country. Southern people and railroad men will  
find the best accommodations.

J. WARREN COLEMAN, JR., Manager.

# BRUSH LIGHT

—FULL PARTICULARS REGARDING—

## Incandescence AND Arc.

Electric Lighting Systems  
Furnished by writing for  
CATALOGUE No. 13 to  
The BRUSH ELECTRIC CO., Cleveland, Ohio.



Southern Agency of EWART'S DETACHABLE LINK BELTING, 7 South Frederick  
Street, Baltimore, Md. Correspondence Solicited.



R. SWORMSTEDT,  
GENERAL AGENT.



## The Manufacturers' Record

is the most thorough, complete and authentic source of information on Southern industrial affairs in existence. The subscription price is only \$3.00 a year. Some of our subscribers think every issue is worth that much. Try it for a year. Send in your subscription to-day. Don't wait until to-morrow; you may forget it.





materials, we continue quotations same as last given:

No. 1 Foundry.....	\$15 50	@16 50
No. 2 Foundry.....	14 50	@15 00
American Scotch.....	14 50	@15 00
Gray Forge.....	13 00	@14 00
Car-Wheel Iron.....	23 00	@25 00
Ores, Red and Brown.....	1 50	@2 25
Purcase Coke.....	2 00	@2 30
Nails, car-load lots, 30 days.....	—	—
Bar Iron, per 100 lb.....	—	@1 75
Old Rails.....	—	@21 00
Old Wheels.....	—	@15 00
Wrought Scrap, No. 1.....	—	@75 50
Wrought Scrap, No. 2.....	—	@50 50
Cotton Tie Clippings.....	—	—
Cast Scrap.....	—	—
Railroad Splices.....	—	@1 85
Railroad spikes.....	—	@2 25
Light Steel Rails, long ton.....	—	—
Barb wire—Cambria link.....	—	—
Barb wire—four point galvanized.....	—	—
Barb wire.....	—	—

### St. Louis Iron Market.

Specially reported by ROGERS, BROWN & Co., Gay Building, 204 N. 3rd street, St. Louis. W. H. SHIELDS, Manager.

St. Louis, May 3, 1886.

The labor troubles still continue, and business in consequence is very much unsettled. The last advance in Connellsville Coke has caused a corresponding advance in coke irons. We quote for cash f. o. b. St. Louis:

<b>HOT-BLAST CHARCOAL.</b>		
Missouri.....	\$17 00@17 50	
Southern.....	16 00@19 00	
Ohio.....	—	—
<b>COKE AND COAL.</b>		
Missouri.....	—	—
Southern No. 1.....	18 25@18 50	
Southern No. 2.....	17 25@17 50	
Southern No. 2½.....	—	—
American Scotch.....	18 00@19 50	
<b>MILL IRONS.</b>		
Missouri.....	16 00@16 50	
Southern.....	15 75@16 25	
<b>CAR-WHEEL AND MALLEABLE IRON.</b>		
Southern.....	21 00@24 00	
Lake Superior.....	20 00@23 00	
<b>MISCELLANEOUS.</b>		
Old Wheels.....	15 00@16 00	
Old Rails.....	19 00@21 00	
Connellsville Coke, East St. Louis.....	—	@5 65

### TRADE NOTES.

MESSRS. LOCKWOOD, GREENE & Co., mill engineers, Providence, R. I., have made plans for a boiler house and chimney for the Lawrence Dye Works at South Lawrence, Mass.

We have received from the Rand Drill Co., New York, a copy of their catalogue for 1886—a handsomely gotten up book of 130 pages, with illustrated descriptions of their rock drills, air compressors and other mining machinery, and containing fac-simile reproductions of letters from those who are using their machinery.

THE Eureka Steam Heating Co., Rochester, N. Y., have just issued a new edition of their "testimonial book," containing a formidable array of letters endorsing their system of heating. It also shows vertical, sectional and brick set views of their improved vertical tube boiler; also tabulated statements on boiler sizes, lists on radiation, direct, indirect, window and direct-indirect. The book will be of interest to contractors and others interested in methods of heating hotels, churches, schools and other public buildings, as well as private residences.

ONE of the finest catalogues of the season is that of the Lidgerwood Manufacturing Co., manufacturers of improved hoisting engines and boilers, 96 Liberty street, New York. It contains complete descriptions of their various styles of machinery with tables of sizes, prices, etc., and is profusely illustrated with the finest engravings.

MESSRS. LOCKWOOD, GREENE & Co., mill engineers, Providence, R. I., have been engaged to make the plans for the rebuilding of the dye-house and picker building for the Pemberton Mills, Lawrence, Mass., which was recently destroyed by fire.

THE firm of Burke, Fraser & Connett, patent attorneys, Temple Court, New York, has been dissolved, and will be succeeded by the new firm of Arthur C. Fraser & Co. Mr. Arthur C. Fraser, of the old firm, has

associated with himself Mr. George H. Fraser, his brother, who has been for several years in the employ of the old firm, and Mr. Arthur S. Browne, of Washington, D. C., a patent solicitor and attorney at law. With the experience resulting from twelve years' active practice of the profession of patent soliciting on the part of Mr. Arthur C. Fraser, and with the efficient co-operation of his two partners, each of whom is exceptionally skillful in his department, the new firm will no doubt fully maintain the reputation attained by its predecessor. Inventors desiring any service or advice in relation to patents cannot have their needs more satisfactorily attended to than by the firm of Arthur C. Fraser & Co.

### Important.

The improvements of the Grand Union Hotel are simply elegant, and the hotel is always kept in perfect order. It is so convenient to all the depots that guests arriving by the Grand Central Depot have their baggage transferred to and from the Grand Union Hotel in five minutes, free of charge. Guests arriving by steamer or railroad, South, North, East or West, are conveyed to the Grand Union Hotel by the elevated railroad for five to fifteen cents, thereby saving \$3 carriage hire. During the past year 110,000 people occupied the 613 rooms of the Grand Union Hotel at \$1 and upwards per day, including of course its elegant suites of rooms for families on the European plan. The dining-rooms, restaurant, cafe, lunch and wine-rooms were supplied with the best at moderate prices. Families lived better at the Grand Union Hotel, and for less money, than at any other first-class hotel in New York.

TOURISTS will find the American House, Boston, a most convenient point from which to visit places of interest. It contains a large number of suits of rooms particularly adapted to families traveling.

—ESTABLISHED 1865.—

## Steam Boilers

JOHN T. COLEMAN & SONS,

### Steam Boiler Works,

Cor. Holliday and Pleasant Sts., Baltimore.

Manufacturers of all kinds of Steam and Bath Boilers, Smoke Stacks, Water Tanks, Lard Kettles, &c. Particular attention given to repairs.

1837. NOVELTY WORKS. 1893.

JAMES MURRAY & SON,

### Machinists and Millwrights

Engines and Boilers, Mills of all kinds, Marine Railways, &c. Improved Clay Tempering Machinery, Steam or Horse Power. Phosphate Machinery, Crushers, Rollers, Mixers, &c., &c.

40, 42 & 44 York Street, NEAR LIGHT, BALTIMORE.

Repairing of all kinds promptly done.

### HUGH SISSON & SONS,

140 W. Baltimore St., Baltimore,

MANUFACTURERS OF

## Marble Monuments

Tombs, Altars, Counters, Furniture Slabs, Mantels, Tiles.

Estimates and Drawings Free.



## WOOD WORKING MACHINERY

For Cabinet, Chair, Carriage, Wagon, Carpenter, Millwright and and Job Shops and Factories.

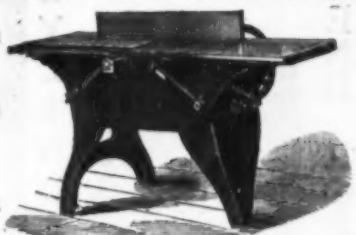
**GOOD WORK & LOW PRICES.**

Before Purchasing Machinery write to

**F. H. CLEMENT,**

215 Milk St., ROCHESTER, N. Y.

Mention "Manufacturers' Record."



## THE MOST Attractive Opportunity Ever Offered For Investment in Florida.

A Gentleman owning valuable business and household property in Florida is called to his former home in Europe by important interests of a permanent character and wishes to dispose of his Florida possessions, situated in and around Longwood, Florida.

Longwood is a town of 40 acres and about 200 inhabitants, in South Florida, 200 miles south from Jacksonville. It lies on the spine of the peninsula. The South Florida Railroad passes through the town on the line to Kissimmee, the present Southern terminus. There is railroad connection from Longwood, East and West, to respectively, the Atlantic coast via Sanford, and to the Gulf coast at Tampa. The neighboring country is comparatively thickly settled, the County of Orange having increased its population from 6,000 in 1880 to 16,000 in 1885. Its elevation and character of soil, draining off both East and West, secure unusual healthfulness, attested by experience, and by the appearance of the people.

### Saw Mill and Factory.

PLANING, DOOR, SASH AND BLINDS, ETC., ETC.

The plant comprises building, machinery, land, accessories, mules, tram-cars, wagons, log carts, etc.

### Store and Merchandise.

(5-12 interest,) doing a rapidly increasing business, paid \$8,000 net profit for the year 1885.

### Railway,

10 miles long, from Longwood to St. John's river.

### 80 Acres Best Pine Land,

DWELLING AND ORANGE GROVE,

1½ miles from Longwood; 20 acres cleared and wire-fenced; 5 acres, surrounding the house, are well cultivated, with every stump removed; 200 of the orange trees are seedlings in full bearing. Now rented to a Northern family.

### 11 Acres.

RESIDENCE, STABLE, LAWN, GARDEN AND FRUIT PLANTATION,

¼ mile from Longwood. A beautiful place, fenced and highly cultivated; with lawn of Bermuda grass, from house to a clear, deep lake, well stocked with fish. Residence carpeted and furnished throughout. Furniture, including piano, kitchen and house utensils and crockery, besides horse and buggy, will be sold with the real estate.

(Each of the pieces described has been critically examined and reported on by an Expert Agent of this office, at the expense of the undersigned, with intent to secure full and truthful representation, and to impartially serve seller and buyer. The original report over signature of the examiner, and with our guarantee, can be consulted on application, and the address of the examiner will be furnished to any person desiring assurance of his competency, or to question him directly.)

A searching scrutiny is invited of the statements herein submitted with care and the most impartial intention. Visits from responsible applicants, with view to buy on personal certification of the offering, will be liberally facilitated.

**CLARENCE GORDON,**

Southern Investment, 59 Liberty Street, New York.

Member of New York Real Estate and Auction Rooms, (Limited.)



## A. WILSON, YACHT SAIL MAKING, EXCLUSIVELY.

440 Atlantic Avenue,

Boston, Mass.



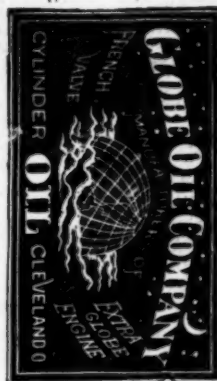
SEND FOR PRICES



CYLINDER OILS



ENGINE OILS



MACHINE OILS

# ★—STAR LUBRICATING OIL WORKS,—★

Office, Room No. 2,  
104½ St. Clair St.GEO. McMILLAN, Manager.  
CLEVELAND, OHIO, U. S. A. Oil Works,  
C. & P. R. R. & Kinsman St.

## SPECIAL OILS

For Cotton Mills and Gins, Woolen Mills,  
Railroads, Tanneries, Saw & Planing Mills.

## THE FINEST ENGINE OILS

Best Qualities, Lowest Prices.

We solicit correspondence, and will send prices and samples upon application. We guarantee our OILS to be SAME AS THE SAMPLE, and in EVERY RESPECT just as represented. TRY THEM.

## WE ARE MANUFACTURERS OF and DEALERS IN

Buckeye Cylinder Oil.	Castor Machine Oil.	Lard Oil.
Champion Cylinder Oil.	Extra Lardoleum Oil.	Neatsfoot Oil.
Globe Cylinder Oil.	Sperm Machine Oil.	Miners' Oil.
Champion Engine Oil.	Golden Machine Oil.	Red Rose Electric Oil.
Buckeye Engine Oil.	Dark Oils (Summer & Winter.)	Crystal Dew Drop Oil.
Prime Engine Oil.	Buckeye Harness Oil.	Head Light Oil.
Extra Engine Oil.	Sperm Signal Oil.	Naphtha.
White Castor Machine Oil.	Axle Grease.	Gasoline.

## PAINTS, OILS, &c.

### PAINTS.

Black Lamp, coach painters.	100@1.00
Black Lamp, ordinary.	100@.60
Black Ivory Drop, fair.	100@.15
Black Ivory Drop, best.	100@.20
Black Paint, in oil.	100@.60
Blue Prussian, fair to best.	100@.40
Blue Prussian, fair to best, in oil.	100@.40
Blue Chinese, dry.	100@.70
Blue Ultramarine.	100@.15
Brown, Spanish.	100@.10
Brown, Van Dyck.	100@.15
Green, chrome.	100@.15
Green, chrome, in oil.	100@.15
Green, Paris, good, 20c; best, 25c.	100@.25
Green, Paris, in oil, bright red.	100@.35
Iron Paint, bright red.	100@.15
Iron Paint, brown.	100@.15
Iron Paint, purple.	100@.15
Iron Paint, ground in oil, bright red.	100@.35
Iron Paint, ground in oil, red.	100@.35
Iron Paint, ground in oil, brown.	100@.35
Iron Paint, ground in oil, purple.	100@.35
Linseed Oil, raw.	100@.40
Single Boiled.	100@.40
Double.	100@.40
Mineral Paints.	100@.40
Orange Mineral.	100@.40
Red Lead, American.	100@.75
Red Venetian, (English) dry.	100@.75
Red Venetian, in oil.	100@.75
Red Indian, dry.	100@.75
Rose Pink.	100@.10
Sienna, American, raw.	100@.40
Sienna, Burnt.	100@.40
Sienna, burnt, in oil.	100@.40
Sienna, raw.	100@.40
Umber, burnt.	100@.40
Umber, burnt, in oil.	100@.40
Umber, raw.	100@.40
Umber, raw, in oil.	100@.40
Vermilion, Chinese.	100@.90
Vermilion, English.	100@.90
Vermilion, American.	100@.90
White Lead, American, pure dry.	100@.75
White Lead, American, pure in oil.	100@.75
White, Paris, English, prime.	100@.75
Yellow Ochre, French.	100@.75
Yellow Ochre, French, in oil.	100@.75
Yellow Ochre, American.	100@.75
Yellow Chrome.	100@.75
Yellow Chrome, in oil.	100@.75
Zinc White, American, No. 1, dry.	100@.75
Zinc White, American, No. 1, in oil.	100@.75
Zinc White, French dry.	100@.75
Zinc White, French in oil.	100@.75

### OILS.

Bleached W. Sperm oil.	100@1.00
Nat.	95@1.00
B. W. Elephant oil.	75@.60
Whale oil.	50@.60
Prime Lard oil.	50@.55
Extra No. 1 Lard oil.	50@.50
Lubricating oils.	100@.45
Miners' oil.	35@.45
W. Pressed Fish oil.	35@.35
Neatsfoot oil.	50@.35
Steam-refined Cylinder oil.	50@.40
Best Refined.	50@.40
Signal oil.	50@.40
Paraffine.	100@.20

### SUNDRIES.

Benzine.	100 gal., 80c
Turpentine.	100 gal., 75c
Chalk.	100 lb., 75c
Chalk, block.	100 lb., 75c

Dryer patent Am'n.	ass't'd cans, 8c; keg, 7c
Frostings.	100@.40
Glue, white.	100@.36
Glue, sheet.	100@.20
Glue, ordinary.	100@.20
Glaziers' Points, zinc.	100@.80
Gum, Copal.	100@.36
Gum, Damar.	100@.25

## METALS.

### TIN PLATES.

Large Pigs.	100@.23
Small Pigs.	100@.24
Bars.	100@.26
No. 1 Refined.	100@.13
Market Half-and-Half.	100@.14
Strictly Half-and-Half.	100@.14
ROOFING PLATES.	
IC, 14x20, Choice Charcoal Terne.	5.00
IX, 14x20, " " "	6.50
IC, 20x28, " " "	10.00
IX, 20x28, " " "	13.00
IC, 20x28, Extra fine quality, charcoal roofing, genuine "old style" redipped.	14.00
IX, 20x28, " " "	18.00
COKE PLATES.	
C, 10x14, bright, "B. V." grade.	5.00
C, 14x20, " " "	5.00
X, 14x20, " " "	6.50
C, 10x20, Gutters.	8.50
SHEET ZINC.	
In casks of 600 lbs., 100 lb.	5.50
In smaller quantities, 100 lb.	6.50
TIN PLATES.	
IC, 10x14, Charcoal.	5.50
IX, 10x14, " " "	7.50
IC, 12x12, " " "	5.75
IX, 12x12, " " "	7.75
IC, 14x20, " " "	5.50
IX, 14x20, " " "	7.50
IXX, 14x20, " " "	9.50
IXXXX, 14x20, " " "	11.50
IXXXX, 14x20, " " "	13.50
IX, 20x28, " " "	15.00
DC, 100, Plate	5.50
DX, 100, " "	7.50
DX, 100, " "	9.50
DX, 100, " "	11.50
BABBITT METAL.	
A. 1.	15
No. 1 Ordinary.	10
Antimony.	18
Excelsior Babbitt Metal, No. 2.	9
LEAD.	
Pig.	5.50
Bar, (15 oz. bars).	5.50
Sheet.	7
Pipe, full coils.	7
COFFER.	
Tinned Sheathing, 14x48, 14, 16, 18 oz.	20
" " Planish'd, 14x48, 14, 16 oz.	30
" " " " " " " " " " " "	20
" " " " " " " " " " " "	35
Finning Extra.	15
Brazier's Copper, 15 to 100 lb.	20
" " " " " " " " " " " "	24
" " " " " " " " " " " "	24
" " " " " " " " " " " "	32
Bolt.	20

Tinning extra.	40
Copper Pit Bottoms.	22

## BRASS.

### ROLL AND SHEET BRASS.

Brown & Sharpe's Gauge the Standard.  
New List, Jan. 17, 1884.  
Dis 30@30.55

### COMMON HIGH BRASS.

Wider than	3	10	12	14	16	18
and including.	10	12	14	16	18	20
To No. 20, inclusive.	.21	.22	.23	.25	.27	.29
Nos. 21, 22, 23 and 24.	.22	.23	.24	.26	.28	.30
Nos. 25 and 26.	.23	.24	.25	.27	.29	.31
Nos. 27 and 28.	.23	.24	.25	.28	.30	.32
Add 9 cts. 10 lb. for sheets cut to particular widths and lengths.						
Add 1/2 c. 10 lb. additional on each number thinner than Nos. 28 to 38 inclusive.						
Brass thinner than No. 38 is Platers' Brass.						
Printers' rules and Plates cut to particular sizes and lengths to No. 20, inclusive.						
Printers' Sheets and Plates cut to particular sizes and lengths to No. 20, inclusive.						
Bracing, Spinning and Spring Brass, one cent more than common High Brass.						
Low Brass four cts. 10 lb. more than common High Brass.						
Gilding, Oreide and Bronze seven cts. 10 lb. more than common High Brass.						

### SLITTING METAL.

Add to list as follows:	
Over 1/2 in. to 2 in., inclusive, Nos. 12 to 20, inclusive.	1/2c.
Over 1/2 in. to 1/4 in., inclusive, Nos. 12 to 20, inclusive.	1
1/4 in. and narrower, not less than.	4
Over 1/2 in. to 2 in., inclusive, Nos. 21 to 28, inclusive.	1
Over 1/2 in. to 1/4 in., inclusive, Nos. 21 to 28, inclusive.	2
1/4 in. and narrower, Nos. 21 to 28, inclusive, not less than.	6
Over 1/2 in. to 2 in., inclusive, Nos. 29 to 32, inclusive.	1 1/2
Over 1/2 in. to 1/4 in., inclusive, Nos. 29 to 32, inclusive.	3
1/4 in. and narrower, Nos. 29 to 32, inclusive, not less than.	12
Over 1/2 in. to 2 in., inclusive, No. 33 and thinner.	3
Over 1/2 in. to 1/4 in., inclusive, No. 33 and thinner.	6
1/4 in. and narrower, No. 33 and thinner, not less than.	18
Slit Metal cut to particular lengths, 10 lb. additional.	5

### PLATERS' OR GOLD METAL.

In bars.	40c.
In ingots.	45c.
In ingots, planed or polished.	46c.

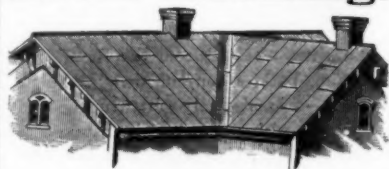
## STAR ENCAUSTIC TILE CO. (LIMITED.)

Manufacturers of all Designs and Colors of Plain and Encaustic FLOORING TILE for Hearths, Floors, Halls, Vestibules, Dining Rooms, Bath Rooms, Porches, Kitchens, Laundries, Banks, Hotels, Depots, &c. Works, Cor. Gist & Bluff Streets; Office, No. 90 Fourth Avenue, Pittsburgh, Pa.

## N. A. HALDEMAN & CO.

### MANUFACTURERS OF

## Iron Roofing.



Suitable for all kinds of buildings. Also jobbers in Rubber and Felt Roofing. We loan the necessary tools needed in applying our Roofing. Send for prices and Catalogue "A."

1221 Main St., WHEELING, W. VA.  
or 1007 Spruce St., Philadelphia, Pa.

## The A. A. BRAND Patent Interlocked Joint Ready made ROOFING

## THE BRADSTREET Mercantile Agency

### HAS NOW BEEN

Under its present successful management for the past seven years.

And during that time its business has more than trebled, while its facilities have proportionately increased.

No expense is considered too great in obtaining and applying to the conduct of the business all possible improvements. With its present system for obtaining and promulgating information, this Agency is justly regarded by its patrons as authority on all matters affecting commercial credit. Its ramifications are greater and its business larger than any similar organization in the world conducted in one interest and under one management.

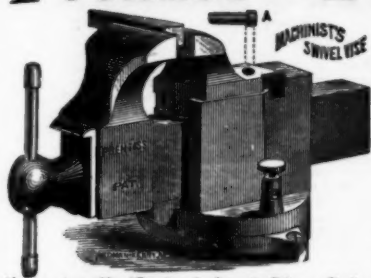
You are respectfully invited to investigate, and if in need of an Agency, to test its ability to serve you.

CHAS. F. CLARK, President.

Baltimore Office,—American Building,  
H. KERSHAW, Supt.



# Prentiss' & Patent Vises.



Adjustable Jaw.  
Stationary or Pat. Swivel Bottoms  
CANNOT GET OUT OF ORDER.  
Cheapest and Best Vises for Railroad Shops, Machinists, Manufacturers, Mechanics, &c.



"Peerless" (Swivel Jaw) Pipe Grip.  
Every Part Interchangeable.  
CAN BE USED ON ANY VISE.

"PEERLESS" (SWIVEL) PIPE GRIP.  
For Sale by the Trade.

PRENTISS VISE CO., 23 Dey Street, NEW YORK, Sole Proprietors

# Ludlow Valve Manfg. Co.

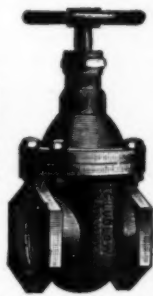
Office and Works:

938 to 954 River Street, and 67 to 83 Vail Avenue,

—TROY, N. Y.—



**VALVES**  
Double and Single Gate, 1/4 inch to 48 inch—outside and inside  
Screws, Indicators, etc., for  
Gas, Water, Steam, Oil.  
Send for Circular.



Also Fire Hydrants, Yard and Wash Hydrants, Check and Foot Valves.

# B. W. PAYNE & SONS

Box 1018.

ELMIRA, N. Y.

Builders of Stationary  
AND  
PORTABLE

**Engines & Boilers**

FINE AUTOMATIC ENGINES.

VERTICAL AND SAFETY ENGINES AND BOILERS

For every duty. Particularly adapted for the South. Thousands now in use. We guarantee the "Payne Automatic" to furnish same power as the ordinary Throttling Engine at one-third to one-half less fuel and water, doing same work. Send for circulars and prices.

## DUQUESNE FORGE.

MILLER FORCE COMPANY, LIMITED.

Manufacturers of

**IRON & STEEL,**

MARINE and LOCOMOTIVE  
FORGINGS.

Works at  
Rankin Station, B. & O. R. R.

Branch Office and P. O. Address,  
Pittsburgh, Pa.

**STEEL  
CASTINGS**

FROM 1-4 to 15,000 lbs. WEIGHT.

True to pattern, sound, solid, free from blow-holes, and of unequal strength.  
Stronger and more durable than iron forgings in any position or for any service whatever.  
40,000 CRANK SHAFTS and 30,000 GEAR WHEELS of this steel now running prove this.  
CRANK SHAFTS and GEARING specialties.  
STEEL CASTINGS of every description.  
Send for Circulars and Prices to

—CHESTER STEEL CASTINGS CO.—

Office, 407 Library Street, Philadelphia.

Works, Chester, Pa.

To Secure **SOUTHERN TRADE**  
ADVERTISE IN THE  
**MANUFACTURERS' RECORD.**

# WM. SELLERS & CO.

Engineers and Machinists, PHILADELPHIA, PA.

## Improved Machine Tools for Working Iron and Steel.

SHAFTING, PULLEYS, HANGERS, Etc., for Transmitting Power.  
IMPROVED SELF-ADJUSTING INJECTOR OF 1876, started, stopped and regulated as to capacity by one lever.

### FIXED NOZZLE AUTOMATIC INJECTOR OF 1885.

Either a lifter or non-lifter; no extra valves or fittings required, tubes can be removed without disturbing pipe connections; is perfectly automatic in its action; requires no special manipulation to operate it.  
Descriptive pamphlets and prices furnished on application to

Philadelphia Office, or to New York Office, 79 Liberty Street.

# The TABOR MANUFACTURING CO.

—SOLE MANUFACTURERS OF—

## TABOR STEAM ENGINE GOVERNOR

Patented April, 1883, and December, 1884.

WILL REGULATE AS CLOSELY AS THE BEST AUTOMATIC CUT-OFF ENGINE.

Perfectly adapted to every type of Stationary and Portable Engine. Fitted with speed adjuster, Sawyer's Lever and Automatic Safety Stop.

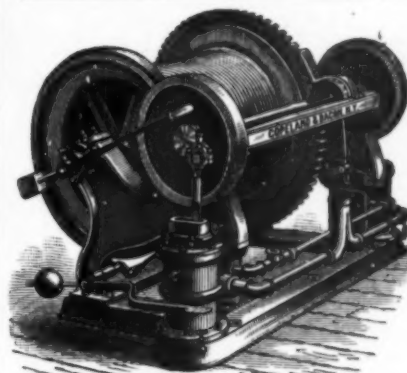
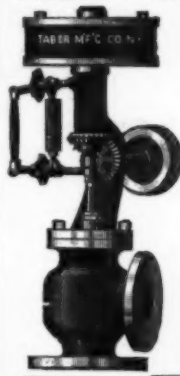
**SIMPLE, SENSITIVE AND DURABLE.**

All Parts Interchangeable.

SEND FOR SPECIAL CIRCULARS AND PRICE LISTS.

OFFICE AND SALESROOM,

113 Liberty Street, - - - New York City.



**BACON** Winding Engines,  
Furnace Hoists  
Mine Hoists.

(With or Without Boilers.)

"Mining PLANTS," Concentrating Works and Dredging Machinery Furnished Complete.

**COPELAND & BACON**

85 Liberty Street, New York.

FAIRBANKS & CO., Agts.,  
Philadelphia, Pa.  
Pittsburgh, Pa.  
Buffalo, N. Y.

REFERENCES:—Croton Magnetic Iron Mines, Brewster's, N. Y. Crown Point Iron Co., Crown Point, N. Y. Belvidere Iron Co., 52 Broadway, New York. Sea Island Chemical Co., Beaufort, S. C.

# The Babcock & Wilcox Water Tube Boilers.

BRANCH OFFICES:

50 Oliver Street,  
Boston.

32 N. 4th St.,  
Philadelphia.

3 Spring St.,  
Sydney, N. S. W.

54 Carondelet  
St., N. Orleans.



Manufactured by the **BABCOCK & WILCOX CO., 30 Cortlandt Street, NEW YORK.**

BRANCH OFFICES

114 Newgate St.,  
London, Eng.

64 S. Canal St.,  
Chicago.

561 Mission St.,  
San Francisco.

San Ignacio,  
No. 50, Havana,  
Cuba.

107 Hope Street,  
Glasgow,  
Scotland.

# THE MIDVALE STEEL CO.

## TIRES and AXLES

OF EVERY DESCRIPTION.

—TOOL AND  
MACHINERY STEEL



SPRING AND GUN  
STEEL.

CRUCIBLE AND OPEN HEARTH STEEL.

Works & Main Office:

Nicetown, Philadelphia, Pa.

BRANCH OFFICE:

333 Walnut St., Philadelphia, Pa.

# SAML. G. B. COOK & CO., HARDWARE

MANUFACTURERS' AGENTS  
63, 65, 67 and 69 German St., BALTIMORE, MD.

## AGENTS FOR

American Screw Co.—Screws, Rivets, Bolts, etc.  
Branford Lock Works.  
Buckthorn Fence Co.—Buckthorn Fencing.  
Blair Manufacturing Co.—Easy Lawn Mowers.  
Ross Molasses Gates.  
Buffalo Hammer Co.—Cast Steel Hammers.  
C. S. Bell & Co.—Farm Bells.  
Carr & Crawley.—Shelf and Saddlery Hardware.  
Clark Bros. & Co.—Bolts.  
H. Chapin's Sons.—Planes, Rules, Levels, etc.  
John Chatillon & Son.—Spring Balances.  
R. S. Clark & Co.—Hand and Sleigh Bells.

A. Field & Sons.—Tacks, Finishing and Shoe Nails  
Gooch Freezer Co.—Peerless Freezers.  
H. C. Hart Manufacturing Co.—Shutter and Spring Hinges, Screen  
Frames, &c.  
Hubbard & Co.—Axe, Shovels, Hoes and Saws.  
Kimball's Patent Solid Steel Shovels and Spades.  
Lawson & Brenner.—Keystone Forks.  
W. T. Mercereau & Co.—Stair Rods, Dog Collars, &c.  
Nicholson File Co.  
Peck Bros. & Co.—Brass Cocks.  
Patton Manufacturing Co.—Enameled and Finished Stoneware, &c.  
Penfield, Block & Co.—Tackle Blocks.

Harvey W. Peace Co.—Hand, Rip and Panel Saws.  
H. W. Reed—Brick and Plastering Trowels, Shoe Knives, &c.  
Scott Manufacturing Co.—Peach and Apple Parers, Ice Creepers, &c.  
Henry Seymour Cutlery Co.—Seymour's and Massachusetts Shears.  
B. Seitz.—Root Hammers.  
Underhill Edge Tool Co.—Hatchets, Adzes, &c.  
Walker Horse Shoe Co.—Patent Horse and Mule Shoes.  
R. Wallace & Son, Manufacturers.—Plated Ware.  
Wheeling Hinge Co.—Wrought Goods.  
Woodruff, Miller & Co.—Ox Shoes.  
J. W. Williams & Son.—Thimble Skeins.  
Zimmerman Shutter Fasteners.

## BAGNALL & LOUD BLOCK CO. BOSTON, MASS.

Largest Manufacturers of Tackle Blocks in the World.

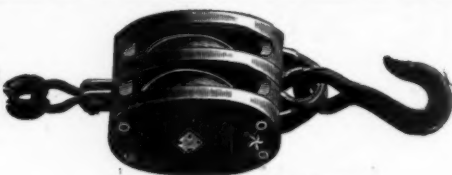
Manufacturers of the Latest Improved Self-Adjusting ROLLER BUSHED and GENUINE METALINE BUSHED  
and Iron Bushed Rope and Iron Strapped

### TACKLE BLOCKS.

CLASP OPEN.



Improved Self-Adjusting Roller Bushed Iron Sheave.



Improved Harcourt Patent Block.



Improved Self-Locking Link Snatch Block.

Send for the Celebrated  
STAR BRAND.

Send for Catalogue  
No. 5.

OFFICE AND WORKS:  
Euclid Ave. Station.

## CLEVELAND HARDWARE CO.

CLEVELAND, OHIO.

Manufacture

PATENT WROUGHT IRON HAND AND POWER SHEARS,

With and Without Punch Attachment, For CUTTING and PUNCHING.

IRON and SOFT STEEL.

Also a Full Line of WAGON HARDWARE.

SPECIAL SHAPE AND MERCHANTS' IRON.

Collins' Brake, Patent Wagon Box Rod, Wrought Iron Seat Spring Hooks, Lockpin Clevis and Clip (for doubletrees,) Stay Chain Ring, Wagon and Implement Clevises, Wagon Box Stop Bolts, Wrought Iron Bolster Plates, Hammer Strap, Wagon Box Iron, Axle Clip, Wagon Seat Springs, Buggy Toe Rail, Buggy Rub Irons, New Style Pole Cap and Hold Back, Hold Back and Wear Iron, Side Braces, King Bolts, Reach Pins, Doubletree Plates, Stay Chain Bolts, Staples, Coupling and Tongue Plates, Circle Posts, Singletrees, Clips, Singletree Irons, and a Full and Complete Line. We solicit correspondence with THE TRADE and will send illustrated catalogue, prices and discounts upon application.



THE  
**FRANCIS AXE CO.**  
BUFFALO, N. Y.  
MAKE THE BEST AXE IN THE WORLD.

EXCLUSIVE SALE GIVEN  
TO ONE HOUSE ONLY IN EACH PLACE.



All Patterns Made to Order.

ONLY FULL-WEIGHT STEEL USED!

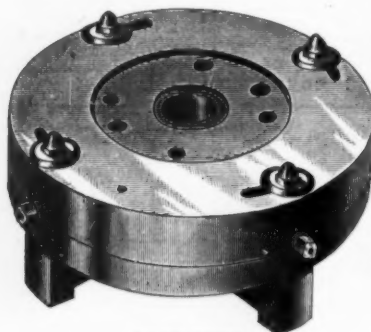
**All Steel Axes**

A Specialty.

**ORDER SAMPLE LOT!**



## NEW PATENT COMBINATION LATHE CHUCK.



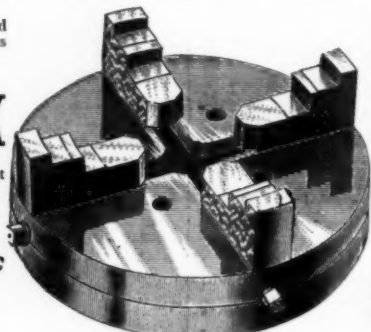
BACK VIEW.

This Chuck is constructed  
upon the same general principles  
as the well-known

**Horton Chuck**

with the additional feature that  
it can be used either as an

*Independent,  
Universal Concentric  
or Eccentric.*



FRONT VIEW.

Warranted to be the  
Strongest, Most Ac-  
curate, and Easily  
Operated Combina-  
tion Chuck in the  
market.

TRADE MARK:

The Horton Lathe Chuck.



VIEW OF WORKING PARTS.

Manufactured by THE E. HORTON & SON CO., WINDSOR LOCKS, CONN., U. S. A. Send for Illustrated Price-List.



J. E. BOLLES & CO., WIRE and IRON WORKS,

DETROIT, MICHIGAN.

Office Railings & Partitions, Stable Fittings, Builders' Iron Work, &c.

SEND FOR ILLUSTRATED CATALOGUE AND MENTION THIS PAPER.









Door Mineral.... Same discounts as Door Locks.  
 Door Por. Jap'd....  
 Door Por. Plated....  
 Door Por....  
 Furniture, Wood Screws..... 75c gross inch, dis 10 %  
 Picture..... dis 20 %  
 Picture, Picture..... dis 35 %  
 Shutter, Porcelain..... dis 50 %

**LADIES.**  
 Melting & Skim'ng, Monroe's Pat. # dis 40 %  
 Melting, C & C..... dis 30 %

**LAWN MOWERS.**  
 Acme Buckeye, Easy & Excelsior, new list, dis 40 %

**LOCKERS.**  
 Wire Clothes, Galvanized, 100 feet..... dis 25 %

**LOCKS AND LATCHES.**  
 Cabinet, Eagle..... Changes made in list price  
 Cabinet, Gaylord..... of some numbers Jan. 1,  
 Cabinet, Bridgeport..... 1881, dis 25 %  
 Cabinet, P. & F. Corbin..... dis 40 %  
 Yale Lock Co., Flat Key..... dis 40 %  
 Plate..... dis 33 %

**DOOR LOCKS, ETC.**

Bradford.....  
 Norwalk.....  
 Norwich.....  
 P. & F. Corbin.....  
 Russell & Erwin.....  
 Mallory, Wheeler & Co.....  
 Nimick & Brittan Mfg. Co.....  
 Padlocks—Russell & Erwin.....  
 Mallory, Wheeler & Co.....  
 Norwich Lock Manf. Co.....  
 Wm. Wilcox & Co.....  
 Nimick & Brittan Mfg. Co.....  
 Wm. Wilcox & Co's Plate Locks.....  
 Yale Lock Manf. Co's "Standard".....  
 Romer's.....  
 Conestoga.....  
 Scandinavian, "Norwich".....  
 Nimick & Brittan's Burglar-Proof Locks.....

**MALLETS.**  
 Fenfield Block Co., Apple, Hickory and  
 Lignumvitae.....

**MEAT CUTTERS.**  
 Dixon's (P. S. & W.) Nos. 1, 2, 3, 4.....  
 Perry's, Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.....  
 Woodruff's (P. S. & W.) Nos. 100, 150.....  
 Hales' Nos. 11, 12, 13.....  
 Kieser's No. 55.....  
 Kieser's Gem.....  
 Kieser's No. 82.....  
 Kieser's Monarch.....  
 Beef Shaver, (Enterprise Manf. Co.).....

**MOLASSES GATES.**  
 Stebbins Patterns.....  
 Stebbins Genuine.....  
 Stebbins Tinned Ends.....  
 Chase's Hard Metal.....  
 Self-Measuring, (Enterprise).....  
 Lincoln's Pattern.....  
 Weed's.....  
 Boss Nos. 1, 2, 3, 4.....  
 Boss, Japanned Finish.....  
 Boss, Bronze Finish.....

**NUTS AND WASHERS.**  
 Square Nuts.....  
 Hexagon Nuts.....  
 Washers.....

**OILERS.**  
 Zinc and Tin.....  
 Brass and Copper.....  
 Malleable (Hammer's).....  
 Per dozen.....

**PLANING MACHINES.**  
 Astor Planing Machine.....  
 Crown Planing Machine.....  
 6 in., 8 in., 10 in., 12 in. each.....

**PLANES AND PLANE IRONS.**  
 Bench, First Quality.....  
 Bench, Second Quality.....  
 Molding.....  
 Bailey's (Stanley R. & L. Co.) New list, Jan.  
 1879.....  
 The Stanley (S. R. & L. Co.) new list,  
 January 1879.....  
 Bailey's.....  
 Plane Irons, Butcher's.....  
 Plane Irons, Auburn Tool Co.....  
 Plane Iron, Ohio Tool Co.....  
 Plane Irons, Sandusky Tool Co.....

**PLIERS AND NIPPERS.**  
 Button's Patent.....  
 Hall's Pat. Compound Lever Cutting Nippers.....  
 No. 2, 5 in., 6 in., 7 in., 8 in., 9 in., 10 in., 11 in., 12 in., 13 in., 14 in., 15 in., 16 in., 17 in., 18 in., 19 in., 20 in., 21 in., 22 in., 23 in., 24 in., 25 in., 26 in., 27 in., 28 in., 29 in., 30 in., 31 in., 32 in., 33 in., 34 in., 35 in., 36 in., 37 in., 38 in., 39 in., 40 in., 41 in., 42 in., 43 in., 44 in., 45 in., 46 in., 47 in., 48 in., 49 in., 50 in., 51 in., 52 in., 53 in., 54 in., 55 in., 56 in., 57 in., 58 in., 59 in., 60 in., 61 in., 62 in., 63 in., 64 in., 65 in., 66 in., 67 in., 68 in., 69 in., 70 in., 71 in., 72 in., 73 in., 74 in., 75 in., 76 in., 77 in., 78 in., 79 in., 80 in., 81 in., 82 in., 83 in., 84 in., 85 in., 86 in., 87 in., 88 in., 89 in., 90 in., 91 in., 92 in., 93 in., 94 in., 95 in., 96 in., 97 in., 98 in., 99 in., 100 in., 101 in., 102 in., 103 in., 104 in., 105 in., 106 in., 107 in., 108 in., 109 in., 110 in., 111 in., 112 in., 113 in., 114 in., 115 in., 116 in., 117 in., 118 in., 119 in., 120 in., 121 in., 122 in., 123 in., 124 in., 125 in., 126 in., 127 in., 128 in., 129 in., 130 in., 131 in., 132 in., 133 in., 134 in., 135 in., 136 in., 137 in., 138 in., 139 in., 140 in., 141 in., 142 in., 143 in., 144 in., 145 in., 146 in., 147 in., 148 in., 149 in., 150 in., 151 in., 152 in., 153 in., 154 in., 155 in., 156 in., 157 in., 158 in., 159 in., 160 in., 161 in., 162 in., 163 in., 164 in., 165 in., 166 in., 167 in., 168 in., 169 in., 170 in., 171 in., 172 in., 173 in., 174 in., 175 in., 176 in., 177 in., 178 in., 179 in., 180 in., 181 in., 182 in., 183 in., 184 in., 185 in., 186 in., 187 in., 188 in., 189 in., 190 in., 191 in., 192 in., 193 in., 194 in., 195 in., 196 in., 197 in., 198 in., 199 in., 200 in., 201 in., 202 in., 203 in., 204 in., 205 in., 206 in., 207 in., 208 in., 209 in., 210 in., 211 in., 212 in., 213 in., 214 in., 215 in., 216 in., 217 in., 218 in., 219 in., 220 in., 221 in., 222 in., 223 in., 224 in., 225 in., 226 in., 227 in., 228 in., 229 in., 230 in., 231 in., 232 in., 233 in., 234 in., 235 in., 236 in., 237 in., 238 in., 239 in., 240 in., 241 in., 242 in., 243 in., 244 in., 245 in., 246 in., 247 in., 248 in., 249 in., 250 in., 251 in., 252 in., 253 in., 254 in., 255 in., 256 in., 257 in., 258 in., 259 in., 260 in., 261 in., 262 in., 263 in., 264 in., 265 in., 266 in., 267 in., 268 in., 269 in., 270 in., 271 in., 272 in., 273 in., 274 in., 275 in., 276 in., 277 in., 278 in., 279 in., 280 in., 281 in., 282 in., 283 in., 284 in., 285 in., 286 in., 287 in., 288 in., 289 in., 290 in., 291 in., 292 in., 293 in., 294 in., 295 in., 296 in., 297 in., 298 in., 299 in., 300 in., 301 in., 302 in., 303 in., 304 in., 305 in., 306 in., 307 in., 308 in., 309 in., 310 in., 311 in., 312 in., 313 in., 314 in., 315 in., 316 in., 317 in., 318 in., 319 in., 320 in., 321 in., 322 in., 323 in., 324 in., 325 in., 326 in., 327 in., 328 in., 329 in., 330 in., 331 in., 332 in., 333 in., 334 in., 335 in., 336 in., 337 in., 338 in., 339 in., 340 in., 341 in., 342 in., 343 in., 344 in., 345 in., 346 in., 347 in., 348 in., 349 in., 350 in., 351 in., 352 in., 353 in., 354 in., 355 in., 356 in., 357 in., 358 in., 359 in., 360 in., 361 in., 362 in., 363 in., 364 in., 365 in., 366 in., 367 in., 368 in., 369 in., 370 in., 371 in., 372 in., 373 in., 374 in., 375 in., 376 in., 377 in., 378 in., 379 in., 380 in., 381 in., 382 in., 383 in., 384 in., 385 in., 386 in., 387 in., 388 in., 389 in., 390 in., 391 in., 392 in., 393 in., 394 in., 395 in., 396 in., 397 in., 398 in., 399 in., 400 in., 401 in., 402 in., 403 in., 404 in., 405 in., 406 in., 407 in., 408 in., 409 in., 410 in., 411 in., 412 in., 413 in., 414 in., 415 in., 416 in., 417 in., 418 in., 419 in., 420 in., 421 in., 422 in., 423 in., 424 in., 425 in., 426 in., 427 in., 428 in., 429 in., 430 in., 431 in., 432 in., 433 in., 434 in., 435 in., 436 in., 437 in., 438 in., 439 in., 440 in., 441 in., 442 in., 443 in., 444 in., 445 in., 446 in., 447 in., 448 in., 449 in., 450 in., 451 in., 452 in., 453 in., 454 in., 455 in., 456 in., 457 in., 458 in., 459 in., 460 in., 461 in., 462 in., 463 in., 464 in., 465 in., 466 in., 467 in., 468 in., 469 in., 470 in., 471 in., 472 in., 473 in., 474 in., 475 in., 476 in., 477 in., 478 in., 479 in., 480 in., 481 in., 482 in., 483 in., 484 in., 485 in., 486 in., 487 in., 488 in., 489 in., 490 in., 491 in., 492 in., 493 in., 494 in., 495 in., 496 in., 497 in., 498 in., 499 in., 500 in., 501 in., 502 in., 503 in., 504 in., 505 in., 506 in., 507 in., 508 in., 509 in., 510 in., 511 in., 512 in., 513 in., 514 in., 515 in., 516 in., 517 in., 518 in., 519 in., 520 in., 521 in., 522 in., 523 in., 524 in., 525 in., 526 in., 527 in., 528 in., 529 in., 530 in., 531 in., 532 in., 533 in., 534 in., 535 in., 536 in., 537 in., 538 in., 539 in., 540 in., 541 in., 542 in., 543 in., 544 in., 545 in., 546 in., 547 in., 548 in., 549 in., 550 in., 551 in., 552 in., 553 in., 554 in., 555 in., 556 in., 557 in., 558 in., 559 in., 560 in., 561 in., 562 in., 563 in., 564 in., 565 in., 566 in., 567 in., 568 in., 569 in., 570 in., 571 in., 572 in., 573 in., 574 in., 575 in., 576 in., 577 in., 578 in., 579 in., 580 in., 581 in., 582 in., 583 in., 584 in., 585 in., 586 in., 587 in., 588 in., 589 in., 590 in., 591 in., 592 in., 593 in., 594 in., 595 in., 596 in., 597 in., 598 in., 599 in., 600 in., 601 in., 602 in., 603 in., 604 in., 605 in., 606 in., 607 in., 608 in., 609 in., 610 in., 611 in., 612 in., 613 in., 614 in., 615 in., 616 in., 617 in., 618 in., 619 in., 620 in., 621 in., 622 in., 623 in., 624 in., 625 in., 626 in., 627 in., 628 in., 629 in., 630 in., 631 in., 632 in., 633 in., 634 in., 635 in., 636 in., 637 in., 638 in., 639 in., 640 in., 641 in., 642 in., 643 in., 644 in., 645 in., 646 in., 647 in., 648 in., 649 in., 650 in., 651 in., 652 in., 653 in., 654 in., 655 in., 656 in., 657 in., 658 in., 659 in., 660 in., 661 in., 662 in., 663 in., 664 in., 665 in., 666 in., 667 in., 668 in., 669 in., 670 in., 671 in., 672 in., 673 in., 674 in., 675 in., 676 in., 677 in., 678 in., 679 in., 680 in., 681 in., 682 in., 683 in., 684 in., 685 in., 686 in., 687 in., 688 in., 689 in., 690 in., 691 in., 692 in., 693 in., 694 in., 695 in., 696 in., 697 in., 698 in., 699 in., 700 in., 701 in., 702 in., 703 in., 704 in., 705 in., 706 in., 707 in., 708 in., 709 in., 710 in., 711 in., 712 in., 713 in., 714 in., 715 in., 716 in., 717 in., 718 in., 719 in., 720 in., 721 in., 722 in., 723 in., 724 in., 725 in., 726 in., 727 in., 728 in., 729 in., 730 in., 731 in., 732 in., 733 in., 734 in., 735 in., 736 in., 737 in., 738 in., 739 in., 740 in., 741 in., 742 in., 743 in., 744 in., 745 in., 746 in., 747 in., 748 in., 749 in., 750 in., 751 in., 752 in., 753 in., 754 in., 755 in., 756 in., 757 in., 758 in., 759 in., 760 in., 761 in., 762 in., 763 in., 764 in., 765 in., 766 in., 767 in., 768 in., 769 in., 770 in., 771 in., 772 in., 773 in., 774 in., 775 in., 776 in., 777 in., 778 in., 779 in., 780 in., 781 in., 782 in., 783 in., 784 in., 785 in., 786 in., 787 in., 788 in., 789 in., 790 in., 791 in., 792 in., 793 in., 794 in., 795 in., 796 in., 797 in., 798 in., 799 in., 800 in., 801 in., 802 in., 803 in., 804 in., 805 in., 806 in., 807 in., 808 in., 809 in., 810 in., 811 in., 812 in., 813 in., 814 in., 815 in., 816 in., 817 in., 818 in., 819 in., 820 in., 821 in., 822 in., 823 in., 824 in., 825 in., 826 in., 827 in., 828 in., 829 in., 830 in., 831 in., 832 in., 833 in., 834 in., 835 in., 836 in., 837 in., 838 in., 839 in., 840 in., 841 in., 842 in., 843 in., 844 in., 845 in., 846 in., 847 in., 848 in., 849 in., 850 in., 851 in., 852 in., 853 in., 854 in., 855 in., 856 in., 857 in., 858 in., 859 in., 860 in., 861 in., 862 in., 863 in., 864 in., 865 in., 866 in., 867 in., 868 in., 869 in., 870 in., 871 in., 872 in., 873 in., 874 in., 875 in., 876 in., 877 in., 878 in., 879 in., 880 in., 881 in., 882 in., 883 in., 884 in., 885 in., 886 in., 887 in., 888 in., 889 in., 890 in., 891 in., 892 in., 893 in., 894 in., 895 in., 896 in., 897 in., 898 in., 899 in., 900 in., 901 in., 902 in., 903 in., 904 in., 905 in., 906 in., 907 in., 908 in., 909 in., 910 in., 911 in., 912 in., 913 in., 914 in., 915 in., 916 in., 917 in., 918 in., 919 in., 920 in., 921 in., 922 in., 923 in., 924 in., 925 in., 926 in., 927 in., 928 in., 929 in., 930 in., 931 in., 932 in., 933 in., 934 in., 935 in., 936 in., 937 in., 938 in., 939 in., 940 in., 941 in., 942 in., 943 in., 944 in., 945 in., 946 in., 947 in., 948 in., 949 in., 950 in., 951 in., 952 in., 953 in., 954 in., 955 in., 956 in., 957 in., 958 in., 959 in., 960 in., 961 in., 962 in., 963 in., 964 in., 965 in., 966 in., 967 in., 968 in., 969 in., 970 in., 971 in., 972 in., 973 in., 974 in., 975 in., 976 in., 977 in., 978 in., 979 in., 980 in., 981 in., 982 in., 983 in., 984 in., 985 in., 986 in., 987 in., 988 in., 989 in., 990 in., 991 in., 992 in., 993 in., 994 in., 995 in., 996 in., 997 in., 998 in., 999 in., 1000 in.

**SAW FRAMES.**  
 White.....  
 Saw Rods.....

**SAW SETS.**  
 Stillman's Genuine.....  
 Stillman's Imitation.....  
 Common Lever.....  
 Leach's.....  
 Hammer, Hotchkiss.....  
 Aiken's Genuine.....  
 Aiken's Imitation.....  
 Morrill's.....

**SCALERS.**  
 Hatch, Counter, No. 171.....  
 Hatch, Tea, No. 161.....  
 Union Platform, Keystone.....  
 Chicago Scale Co.....  
 Fairbanks Scale Co.....  
 Howe's.....  
 Chatillon's Grocers'.....  
 Chatillon's Eureka.....  
 Family Universal.....  
 Family Favorite.....  
 Family Turnbull's.....  
 Scale Beams, List of Jan. 12, 1882.....

**SCRAPPERS.**  
 Adjust. Box Scraper (S. R. & L. Co.).....  
 Box, 1 Handle.....  
 Box, 2 Handle.....  
 Foot.....  
 Ship, common.....  
 Wilson Mfg. Co.....

**SCREW DRIVERS.**  
 Douglas Mfg. Co.....  
 Diston's.....  
 Cowles Mfg. Co.....  
 Stanley Rule & Level Co's. Var. Hdl's.....  
 Stanley Rule & Level Co's. Black Hdl's.....  
 Ratchet.....  
 Clark's Patent.....  
 Shepardson.....

**SCREWS.**  
 Standard new list, Feb. 15.

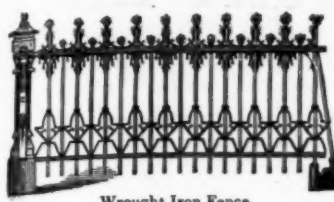
Flat Head Bright.....  
 Round Head Blued.....  
 Flat Head Brass.....  
 Round Head Brass.....  
 Flat Head Blued (add 1/4 % to net).....  
 Brass and Silver Capped.....  
 Japanned Flat Head.....  
 Coach, Patent Gimlet Point.....  
 Coach, Common or Lag.....  
 Bed.....  
 Machine, Flat Head, Iron.....  
 Machine, Round Head, Iron.....  
 Bench, Iron.....  
 Bench, Wood, Beach.....  
 Bench, Wood, Hickory.....  
 Hand, Wood.....  
 Hand Rail, Sargent's.....  
 Hand Rail, Humason, Beckley & Co's.....  
 Hand Rail, Am. Screw Co., list Jan. 1, 1881.....  
 Jack (Wilson's).....

**SCREEN FRAMES AND MIXTURES.**  
 Standard Window Screens No. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 7



**HANIKA IRON FENCE CO.**

Office 19 N. Market Street. Springfield, Ohio. Works, Southern Ave. on P. C. &amp; St. L. R. R.

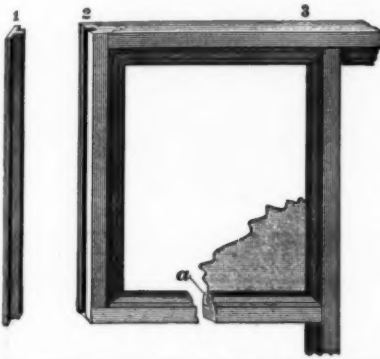


Wrought Iron Fence.

Architectural Iron Work,  
Plain and Ornamental Iron  
Fencing, Mail Iron Crest-  
ing, Window and Wrought  
Cellar Guards, etc.**JAIL WORK  
A SPECIALTY.**

Mail Iron Cresting.

CONTRACTORS AND BUILDERS IN THE SOUTH it will pay you to write for our catalogues and price-lists. Correspondence solicited.

**STUART'S PATENT  
WINDOW SCREEN FRAME****CHEAPEST FRAME MADE.**

DOES NOT REQUIRE A SKILLED MECHANIC TO FIT.

These frames can be easily fitted to any ordinary window; are cheaper and in appearance far superior to those made by mechanics generally; is capable of adjustment from sizes given down to nothing, and insures close fitting and accurate joints.

**LIST PRICE.**

36x36 inches	.....	\$3.25 per doz. sets.
42x42 "	.....	3-75 "
48x48 "	.....	4-75 "
54x54 "	.....	5-25 "

—MANUFACTURED BY—

**E. C. STEARNS & CO.**  
Syracuse, N. Y.

Send for Circular and Discounts.

**Ross Patent Refrigerator**

Is the Only Guaranteed

**Dry Cold-Air Refrigerator**

MANUFACTURED.

The Best in the World For

Families, Butchers, Brewers, Packers,  
Steamboats, Railroad Cars, Fruit  
Houses, Dairies, Grocers, Saloons, &c.

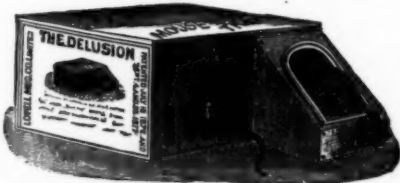
Send for Illustrated Catalogue and Price-Lists.

**Ross Patent Refrigerator Co.**

24 to 32 Staats Street,

**BUFFALO, N. Y.**J. LANSING MOORE, President.  
GEO. D. BRIGGS, Vice-President.  
L. O. DENISON, Secretary and Treasurer.**DELUSION MOUSE TRAP**

—52,932 Sold in One Month.—

**THE ONLY SUCCESSFUL  
Self-Setting TRAP.**"The mouse goes in to get the bait  
And shuts the door with his own weight,  
And then he jumps right through a hole  
And thinks he's out; but, bless his soul,  
He's in cage, somehow or other,  
And sets the trap to catch another."**LOVELL MANUFACTURING CO., Limited, ERIE, PA.****Covert**  
**Manuf'g Company**  
**WEST TROY, N. Y.**Manufacturers of COVERT'S Celebrated Harness Snaps, Swivel Snaps, Open Eye  
Bit and Chain Snaps, Snap and Thimble for Horse and Cattle Ties; ROPE GOODS,consisting of Web and Rope,  
Halters, Rope Horse and  
Cattle Ties, Web Horse Ties,  
Halter Leads, Driving Reins,  
Weight Cords, Hammock  
Ropes, Hitching Cords, Lariat  
Tethers and Picket Pins.  
Also, Leather Horse Ties, Etc. Breast Chains, Hool Chains, Chain Cow  
Ties, Halter Chains, Martingale Chains, Rein Chains, Post Chains, Butt  
Chains, Back or Cart Chains, Log Chains, Stake Chains, Trace Chains.  
Also, STUD, CABLE AND COIL CHAIN. CHAINS OF ALL KINDS  
MADE FROM SAMPLE OR DRAWING.**PATENT ADJUSTABLE SOLDERING IRONS.**Send for Illu-  
strated Catalogue  
and Price-List.

(Awarded First-Class Medal at New Orleans.)

## STEPHENS' VISES.

With STEEL FACED or SOLID STEEL SLIDING JAW, and ADJUSTABLE ATTACHMENTS. Superior in Make, Grip, Strength and Durability, and more economical in Time and Labor than any other Vise. Jewelers, Machinists in general, and Car and Locomotive Builders in particular, will find them especially adapted to their need. Also STEPHENS' PATENT PLANNER CHUCKS. Sold by hardware, machinery and tool dealers. Send for descriptive circular and price-list.

MELVIN STEPHENS, Proprietor,  
Office, 41 Dey St., NEW YORK.

**The GOOCH "PEERLESS" and "GIANT" FREEZERS****The BEST FREEZER  
Ever Made.****Always Gives Satis-  
faction.****Superior In EVERY  
Particular.**

No Other Freezer Ever Had Such a Sale.

Illustrated Price-Lists Furnished on Application.

**THE GOOCH FREEZER CO.**

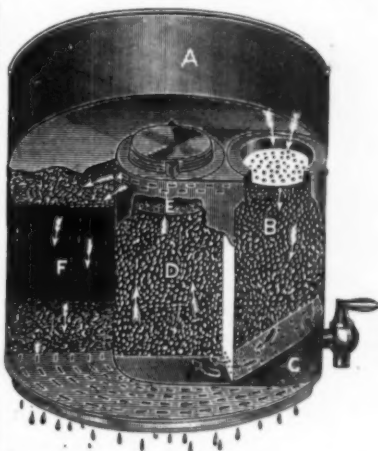
28, 30, 32, 34, 36 &amp; 38 E. Ninth St.,

CORNER SYCAMORE,

—CINCINNATI, OHIO, U. S. A.—

**Jewett's New Filter,**

WITH NEW and IMPROVED FILTERING BEDS. (See Cut.)

For Lake, River, Hydrant, Cistern  
or Rain Water. Natural Gravel and  
Sand, combined with expressly pre-  
pared recarbonized Charcoal.

We have made a valuable improvement in our Filter, it being now constructed so as to prevent any "dirt" or solid matter from entering the Filtering Bed proper, so that the Filter can never become clogged or foul. In fact, the water in this Filter is as pure before entering the Filtering Bed, as any other Filter (not charcoal) ever can make it. After that the action of charcoal renders the water chemically pure—something that charcoal filters alone can do. With ordinary care this Filter will last for many years; and whenever it may need repacking, we can furnish a New Filtering Vessel at about the price it costs to repack, thus saving considerable expense and trouble. Many different sizes and styles, with or without Water Coolers. Price-list, directions for use and book of testimonials sent free by mail on application. Liberal discounts to the trade.

**The JOHN C. JEWETT MFG. CO.**

BUFFALO, N. Y.

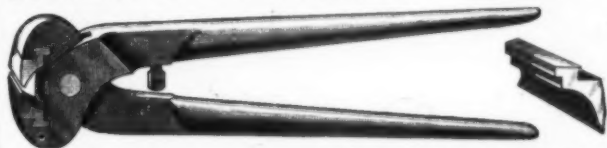
Conductors' Punch. Flower Stand. Wrought-iron Fence. Chair. Revolving Punch.

## FRED. J. MEYERS MFG. CO.

COVINGTON, KY., Manufacturers of  
**WIRE GOODS OF ALL KINDS,**  
Wrought-iron Fencing, Cresting and Hardware Specialties.

Send for Illustrated Catalogue and Price List.

Window Guard. Sand and Grain Riddle. Wire Counter Railing. Sand Screen. Mocking Bird Cage.

**CAREW'S PATENT WIRE CUTTER.**These goods have re-  
cently been greatly  
improved. They  
are now made  
throughout of**FORGED STEEL.**

The advantage of this cutter is seen at a glance. The adjustable jaws are its main feature. These are made of the best tool steel, and are brought to a keen cutting edge before being tempered. The cutting quality is unsurpassed. Whenever they become dulled by use, they can easily be removed, by driving from the end showing price-mark, ground, and as easily replaced. This may be repeated as often as expedient; or they can be replaced by duplicate jaws, thus obviating the necessity of purchasing new cutters. Five sizes 6, 8, 10, 12 and 14 inch. If your merchant does not keep them, address

**M. W. ROBINSON. Sole Agent, 79 Chambers St., N. Y.**

**J. STEVENS ARMS AND TOOL CO.**

P. O. BOX 860,

**CHICOPEE FALLS, Mass.**

MANUFACTURERS OF

**SPRING****Calipers and Dividers,****Fine Machinists' Tools and Firearms.****Our Shooting Gallery****RIFLE****Is the Favorite  
EVERYWHERE**

SEND FOR

ILLUSTRATED CATALOGUE

Patent Combination Gauge.

Patent Combination Gauge.

**STANDARD TOOL COMPANY**

MANUFACTURERS OF

**STRAIGHT LIP INCREASE****Twist Drills****Of Every Description.**SOCKETS, CHUCKS, SCREW  
DRIVER BITS.Special Drills  
to Order.

ORDERS FOR

**SPECIAL  
MACHINERY and TOOLS  
SOLICITED.**

Send Drawings and Specifications.

**CLEVELAND, OHIO.****EXCELSIOR SEAT COMPANY,****COLUMBUS,****OHIO,****U. S. A.****THE****Most Popular Seat ever Produced.**

(PATENTED)

**Manufacturers can improve the Reputation of their Carriages, Buggies and Wagons by adopting the  
"EXCELSIOR SEAT."**

THE EXCELSIOR SEAT possesses many superior points, is very popular and makes a vehicle more salable. For prices and further information send for catalogue and price-list "A."

**CHAS. P. FAY,**

—Manufacturer of—

**MACHINISTS'****Hardware Specialties****49 TAYLOR ST.,****Springfield, - Mass.****CRONK'S WROUGHT IRON****Barn Door Hanger & Stay Roller.**In offering to the trade of 1886 our Celebrated **Wrought Iron Hangers and Stay Rollers**, special attention is called to our **Iron Clad Track** in connection with our Hangers. It is made complete, only requiring hammer and nails to attach it to the building. We make the broad claim that whoever uses our Hangers and Iron Clad Track has the best device known for sliding doors. These hangers never break; can not get off the track, and work so easy that they can be operated by a child. Every pair guaranteed to give satisfaction. For sale by hardware dealers generally.**CRONK HANGER CO., ELMIRA, NEW YORK.****THE RED JACKET STEAM BOILER****\* Flue Blower \***

Is the Cheapest and

Most

Reliable Flue Cleaner

in

The Market.



Simple in Construction

Easy to Operate.

Economizes Fuel and

Increases

Boiler Capacity.

This Flue Blower operates on an entirely new principle; is easily controlled by one hand. It stands without a rival and is pronounced by engineers the only perfect cleaner made. Write for sample and prices to

**STEWART HEATER CO., 19 & 21 Clinton St., Buffalo, N. Y.****The Spiral Pug Mill  
— AND —  
QUAKER BRICK MACHINE.**

Capacity 40,000 Perfect Brick Per Day!

Great Saving in Labor and Expense!

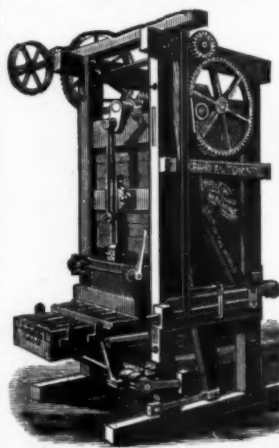
We contract to furnish complete Brick-yard outfits,—Engines and everything needed complete. Write for our handsomely illustrated catalogue, containing valuable information. Estimates furnished. Correspondence solicited. Address

**FLETCHER & THOMAS, Indianapolis, Ind.**

Mention MANUFACTURERS' RECORD.

**The GRAND AUTOMATIC  
Brick \* Machine.****Well Tempered Brick are the Most Reliable.**

The Grand Automatic makes the best tempered Brick in the world. It is the only Machine that makes better brick in every respect than can be made by hand. Send for catalogue to

**JONATHAN CREAGER,  
131 E. Front St., Cincinnati, O.****CHATTANOOGA FOUNDRY & PIPE WORKS.**

D. GILES, Prest. C. B. IBESTER, Vice-Prest. M. LLEWELLYN, Secy. GEO. E. DOWNING, Treas.

Successors to D. GILES &amp; CO., Chattanooga, Tenn., Manufacturers of

Also Castings and Pat-  
terns of Every Descrip-  
tion made to order.



If you want Shingle, Heading and Stave Machinery write for Catalogue A. If you wish Hand Machine ask for Catalogue B. We solicit correspondence, and will give it prompt attention. Mention This Paper.



# TREVOR & CO.

Lockport, N. Y.

MANUFACTURE

## HEADING

## SHINGLE AND STAVE

# Machinery

— ALSO, —

## LATHES

AND

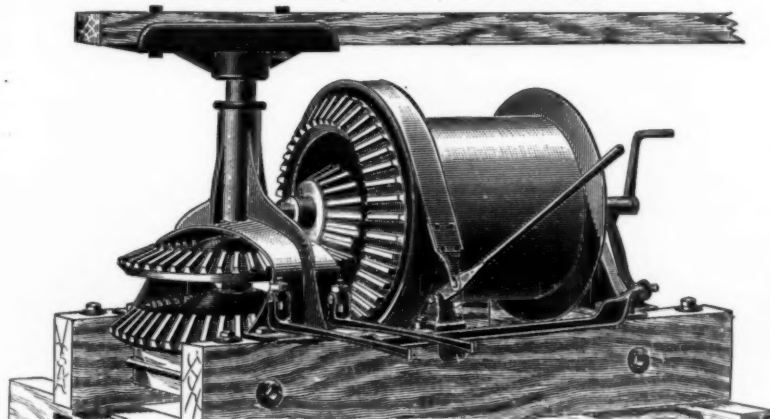
### Special Machinery

FOR

Turning Handles and  
all other Turned Articles of Wood.

### THE CONTRACTORS' PLANT MANFG. CO.

129 ERIE STREET, BUFFALO, N. Y., U. S. A.



This cut illustrates our latest Improved Horse Power Hoisting Machine. This machine has a combination of fast and slow speed. With the fast speed a horse will lift 1,600 to 2,000 lbs. on a single line at a speed of 60 feet per minute, and with a single block 3,500 lbs. 40 feet per minute. With the slow speed a weight of 1½ tons with a single line, and with a single block 3 tons; with two single blocks 5 tons; with double and single blocks 7 tons. The speed single line 30 feet per minute, with single block 15 feet per minute.

In this combination of gears the user has the advantage of two machines embraced in one, with a saving of 25 per cent. in cost and 60 per cent. in weight.

The machine is so simple in its construction that it can be easily understood without explanation. The changing of the speed is done in an instant by simply raising or lowering a lever to the left of the machine without being obliged to stop the horse. With the powerful brake and automatic safety attachment, and with the strength and durability, together with the lightness of this machine, we think we have accomplished a purpose which will be appreciated by our customers, and give us a ready sale of this machine. Price \$150 net.

We Also Manufacture Horse-Power Hoist for Railway Contractors, Bridge Builders and Quarrymen.

Correspondence Solicited. Illustrated Catalogue furnished on application. Mention this paper when you write.

## The Little Giant Excavator.

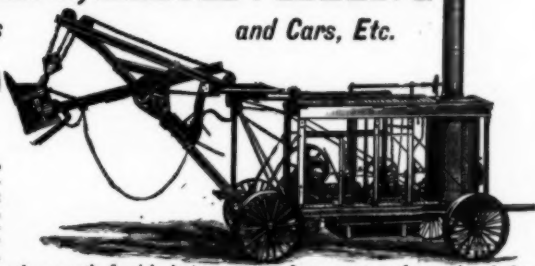
— A LONG FELT WANT SUPPLIED. —

### For DITCHING, EXCAVATING

Loading Wagons

and Cars, Etc.

50 TO 100 PER CENT. SAVED  
IN LABOR.



Capacity of Machine 500 to 700 cubic yards per day. Self propelling. Easily moved. Being built entirely of steel, is both strong, light and a very substantial machine. Can be used on flat-boat for dredging ditches, irrigating or digging canals. Contractors and railroads promptly furnished with estimates for excavators of every description.

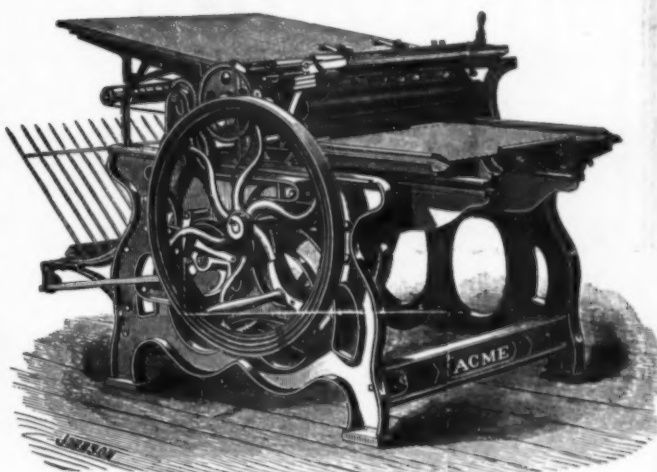
Address VULCAN IRON WORKS, Toledo, Ohio.

## THE MANUFACTURERS' RECORD

IS THE FOREMOST EXPONENT OF THE INDUSTRIAL INTERESTS OF THE SOUTH.

## The ACME Improved Two-Revolution Press.

FOR NEWSPAPER OR JOB WORK.



FOR STEAM OR HAND POWER.

These Presses combine, in a thoroughly perfected machine, many features whose value will be readily appreciated, including several which have never been practically developed by any Cylinder Press. Among these features are: Compact and firm in all its adjustments; the most perfect two roller ink distribution; speed combined with perfect registration; slow movement of the bed during the impression, and quick return; suspending the impression; suspends the grippers, guides and ink; ink can be distributed without inking form; unlimited rolling of the form; composition rollers interchangeable; feeder can suspend action of the ink fountain; impression adjustable while the Press is in operation; whole form accessible for correction on the Press; quiet operation without jar; great saving in wear of type; convenient height of bed.

The present hand-power Acme Presses fully equal, in capacity for fine work, the first-class two-roller Presses of other kinds, and they run much easier, and are also capable of higher speed by steam than any other Cylinder Press manufactured for country offices or for hand operation. The convenience of changing from newspaper to poster and job work is unequalled.

PRICES, - - \$900 to \$2,500.

Circulars, with sizes and prices, will be sent on application.

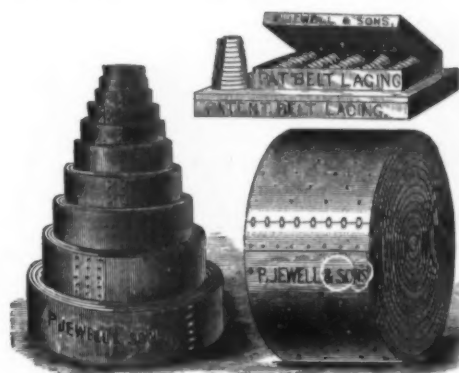
## C. C. CHILD, MANUFACTURER,

64 Federal Street, Boston, Mass.

## JEWELL BELTING CO.

SUCCESSORS TO

P. JEWELL & SONS,



— MANUFACTURERS OF —

## LEATHER \* BELTING

— AND —

## LACE LEATHER,

HARTFORD, CONN.

**J. STEVENS ARMS AND TOOL CO.**

P. O. BOX 880,

**CHICOPEE FALLS, Mass.**

MANUFACTURERS OF

**SPRING****Calipers AND Dividers,****Fine Machinists' Tools and Firearms.****Our Shooting Gallery****RIFLE****Is the Favorite  
EVERYWHERE**

SEND FOR

ILLUSTRATED CATALOGUE

Patent Combination Gauge.

Patent Combination Gauge.

**STANDARD TOOL COMPANY**

MANUFACTURERS OF

**STRAIGHT LIP INCREASE****Twist Drills**

Of Every Description.

SOCKETS, CHUCKS, SCREW  
DRIVER BITS.Special Drills  
to Order.

ORDERS FOR

**SPECIAL  
MACHINERY and TOOLS  
SOLICITED.**

Send Drawings and Specifications.

**CLEVELAND, OHIO.****EXCELSIOR SEAT COMPANY,****COLUMBUS,  
OHIO,  
U. S. A.****THE****Most Popular Seat ever Produced.**

(PATENTED)

**Manufacturers can improve the Reputation of their Carriages, Buggies and Wagons by adopting the  
"EXCELSIOR SEAT."**

THE EXCELSIOR SEAT possesses many superior points, is very popular and makes a vehicle more salable. For prices and further information send for catalogue and price-list "A."

**CHAS. P. FAY,**

—Manufacturer of—

**MACHINISTS'****Hardware Specialties****49 TAYLOR ST.,****Springfield, - Mass.****CRONK'S WROUGHT IRON****Barn Door Hanger & Stay Roller.**

In offering to the trade of 1886 our **Celebrated Wrought Iron Hangers and Stay Rollers**, special attention is called to our **Iron Clad Track** in connection with our Hangers. It is made complete, only requiring hammer and nails to attach it to the building. We make the broad claim that whoever uses our Hangers and Iron Clad Track has the best device known for sliding doors. These hangers never break; can not get off the track, and work so easy that they can be operated by a child. Every pair guaranteed to give satisfaction. For sale by hardware dealers generally.

**CRONK HANGER CO., ELMIRA, NEW YORK.****THE RED JACKET STEAM BOILER****\* Flue Blower \***

Is the Cheapest and  
Most  
Reliable Flue Cleaner  
in  
The Market.



Simple in Construction  
Easy to Operate.  
Economizes Fuel and  
Increases  
Boiler Capacity.

This Flue Blower operates on an entirely new principle; is easily controlled by one hand. It stands without a rival and is pronounced by engineers the only perfect cleaner made. Write for sample and prices to

**STEWART HEATER CO., 19 & 21 Clinton St., Buffalo, N. Y.****The Spiral Pug Mill  
— AND —  
QUAKER BRICK MACHINE.**

Capacity 40,000 Perfect Brick Per Day!

Great Saving in Labor and Expense!

We contract to furnish complete Brick-yard outfits,—Engines and everything needed complete. Write for our handsomely illustrated catalogue, containing valuable information. Estimates furnished. Correspondence solicited. Address

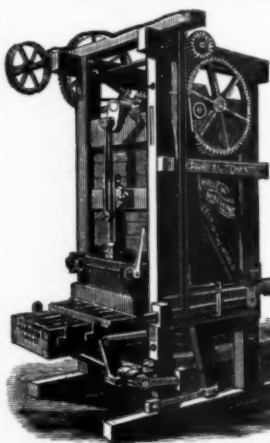
**FLETCHER & THOMAS, Indianapolis, Ind.**

Mention MANUFACTURERS' RECORD.

**The GRAND AUTOMATIC  
Brick \* Machine.**

Well Tempered Brick are the Most Reliable.

The Grand Automatic makes the best tempered Brick in the world. It is the only Machine that makes better brick in every respect than can be made by hand. Send for catalogue to

**JONATHAN CREAGER,  
131 E. Front St., Cincinnati, O.****CHATTANOOGA FOUNDRY & PIPE WORKS.**

D. GILES, Prest. C. B. IBESTER, Vice-Prest. M. LEWELLYN, Secy. GEO. E. DOWNING, Treas.

Successors to D. GILES &amp; CO., Chattanooga, Tenn., Manufacturers of



Also Castings and Pat-  
terns of Every Descrip-  
tion made to order.



If you want Shingle, Heading and Stave Machinery write for Catalogue A. If you wish Handie Machinery ask for Catalogue B. We will promptly attend to all correspondence, and will give it prompt attention. Mention This Paper.



# TREVOR & CO.

Lockport, N. Y.

MANUFACTURE

## HEADING SHINGLE AND STAVE Machinery

— ALSO, —  
LATHES

AND

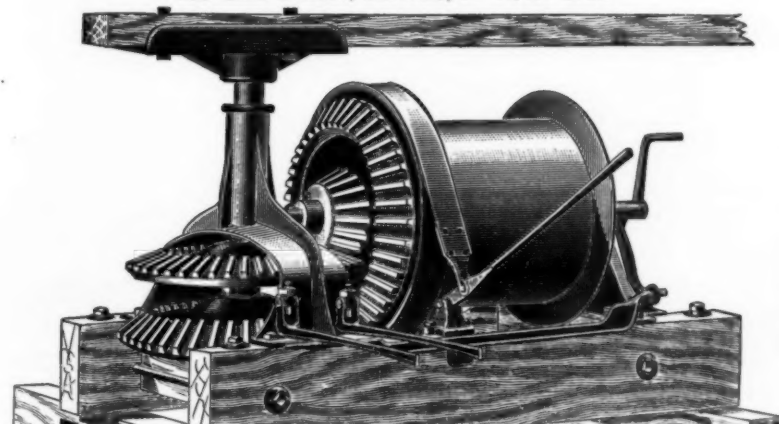
Special Machinery

FOR

Turning Handles and  
all other Turned Ar-  
ticles of Wood.

THE CONTRACTORS' PLANT MANFG. CO.

129 ERIE STREET, BUFFALO, N. Y., U. S. A.



This cut illustrates our latest Improved Horse Power Hoisting Machine. This machine has a combination of fast and slow speed. With the fast speed a horse will lift 1,600 to 2,000 lbs. on a single line at a speed of 60 feet per minute, and with a single block 3,500 lbs. 40 feet per minute. With the slow speed a weight of 1½ tons with a single line, and with a single block 3 tons; with two single blocks 5 tons; with double and single blocks 7 tons. The speed single line 30 feet per minute, with single block 15 feet per minute.

In this combination of gears the user has the advantage of two machines embraced in one, with a saving of 25 per cent. in cost and 60 per cent. in weight.

The machine is so simple in its construction that it can be easily understood without explanation. The changing of the speed is done in an instant by simply raising or lowering a lever to the left of the machine without being obliged to stop the horse. With the powerful brake and automatic safety attachment, and with the strength and durability, together with the lightness of this machine, we think we have accomplished a purpose which will be appreciated by our customers, and give us a ready sale of this machine. Price \$150 net.

We Also Manufacture Horse-Power Hoist for Railway Contractors, Bridge Builders and Quarrymen.

Correspondence Solicited. Illustrated Catalogue furnished on application. Mention this paper when you write.

## The Little Giant Excavator.

— A LONG FELT WANT SUPPLIED. —

### For DITCHING, EXCAVATING

Loading Wagons

and Cars, Etc.

50 TO 100 PER CENT. SAVED  
IN LABOR.



Capacity of Machine 500 to 700 cubic yards per day. Self propelling. Easily moved. Being built entirely of steel, is both strong, light and a very substantial machine. Can be used on flat-boat for dredging ditches, irrigating or digging canals. Contractors and railroads promptly furnished with estimates for excavators of every description.

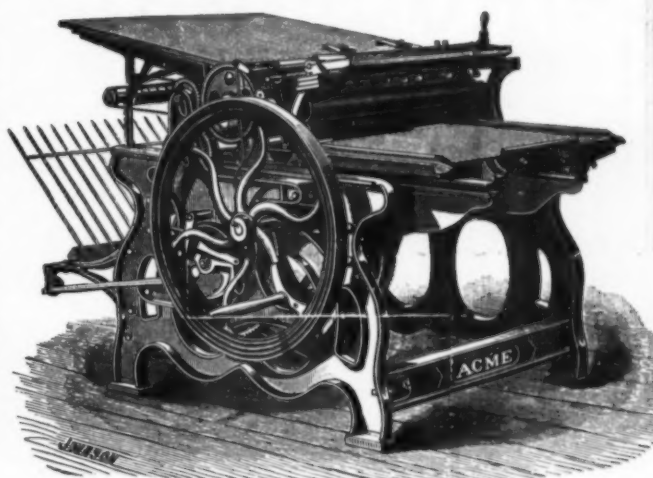
Address VULCAN IRON WORKS, Toledo, Ohio.

## THE MANUFACTURERS' RECORD

IS THE FOREMOST EXPONENT OF THE INDUSTRIAL INTERESTS OF THE SOUTH.

## The ACME Improved Two-Revolution Press.

FOR NEWSPAPER OR JOB WORK.



FOR STEAM OR HAND POWER.

These Presses combine, in a thoroughly perfected machine, many features whose value will be readily appreciated, including several which have never been practically developed by any Cylinder Press. Among these features are: Compact and firm in all its adjustments; the most perfect two roller ink distribution; speed combined with perfect registration; slow movement of the bed during the impression, and quick return; suspending the impression; suspends the grippers, guides and ink; ink can be distributed without inking form; unlimited rolling of the form; composition rollers interchangeable; feeder can suspend action of the ink fountain; impression adjustable while the Press is in operation; whole form accessible for correction on the Press; quiet operation without jar; great saving in wear of type; convenient height of bed.

The present hand-power Acme Presses fully equal, in capacity for fine work, the first-class two-roller Presses of other kinds, and they run much easier, and are also capable of higher speed by steam than any other Cylinder Press manufactured for country offices or for hand operation. The convenience of changing from newspaper to poster and job work is unequalled.

PRICES, - - \$900 to \$2,500.

Circulars, with sizes and prices, will be sent on application.

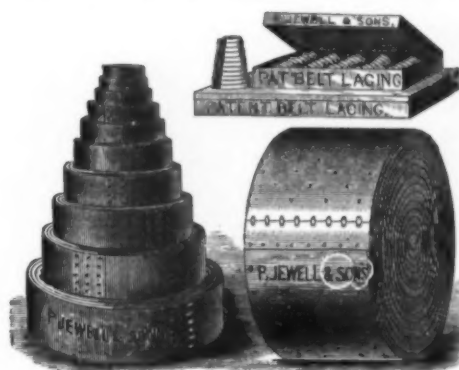
## C. C. CHILD, MANUFACTURER,

64 Federal Street, Boston, Mass.

## JEWELL BELTING CO.

SUCCESSORS TO

P. JEWELL & SONS,



— MANUFACTURERS OF —

## LEATHER • BELTING

— AND —

## LACE LEATHER,

HARTFORD, CONN.

**IRON ROOFING**  
SIDING, CEILING,  
ARCHES AND LATH.  
CINCINNATI  
CORRUGATING CO.  
CINCINNATI, O.  
SEND FOR ILLUSTRATED CATALOGUE.

CORRUGATED

CRIMPED

T. C. SNYDER & CO., Canton, Ohio,

CORRUGATED

BEADED

Manufacturers of a general line of  
**IRON ROOFING,**  
SIDING AND CEILING,  
Patent Seamless, Solderless Eave Trough,  
Malleable Hangers, &c.  
Send for catalogue, price list and samples.

**HOLTON IRON ROOFING CO.**  
SUCCESSORS TO  
W. A. HOOVER & CO.  
MANUFACTURERS OF  
HOLTON'S PATENT  
Improved IRON Roofing,  
"V" EDGED CRIMPED ROOFING,  
SIDING AND CEILING.  
Responsible Agents wanted to handle our  
work in every county in the United States.  
Send for circulars and prices. **New Lisbon, Ohio.**



**SYKES IRON ROOFING CO., NILES, O.**

CRIMPED

SYKES' IMPROVED  
Best Roof in the  
World.  
Suitable for all  
classes of  
Buildings.  
Easy Put On.

BEADED

All my Iron is  
Re-Rolled and  
Box Annealed,  
well Painted on  
both sides with  
Best of Paint  
and Pure Lin-  
seed Oil.

Send for Circular and Price List, and mention this Paper.

CRIMPED & CORRUGATED  
**IRON ROOFING,**  
SIDING, CEILING, METAL SHINGLES.  
**W.G. HYNDMAN & CO.**  
SEND FOR CIRCULAR & PRICES  
CINCINNATI, O.

Established 1868. Incorporated 1879.

**Perforated METALS**  
—FOR—  
**COTTON GINS,**  
Cotton Seed Oil Mills,  
**RICE MILLS,**  
And all other Purposes.  
For catalogues, prices, &c., address  
**The Robert Aitchison**  
**Perforated Metal Co.,**  
76 E. VAN BUREN ST., CHICAGO, ILL.

**THE ROBERT AITCHISON**  
**PERFORATED METAL COMPANY**  
MANUFACTURERS  
AND DEALERS IN  
PERFORATED  
SHEET METAL  
OF ALL KINDS.  
CHICAGO, ILL.



# Perfect Low Pressure Steam Heating

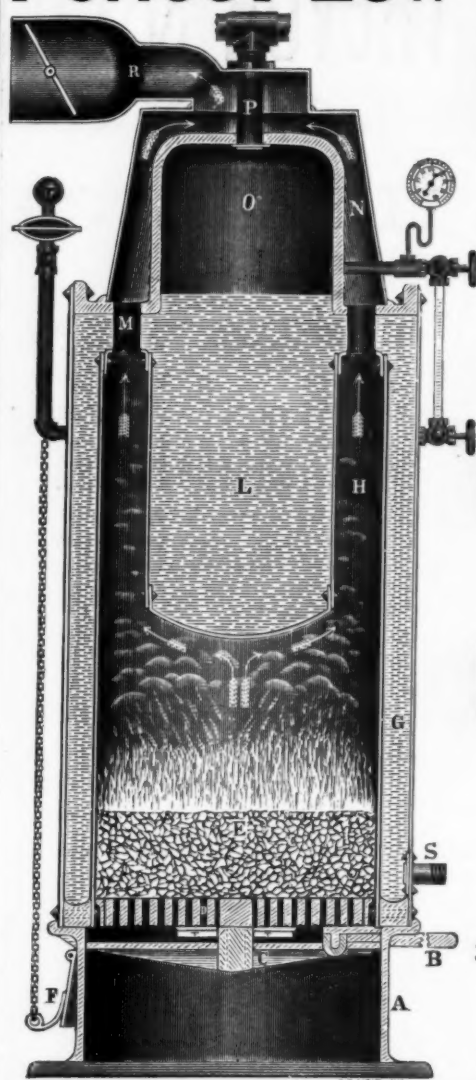
AT A  
Moderate Cost.

## Duplex Steam Heater Co.

10 Barclay St  
NEW YORK.

Send for Illustrated  
Catalogue and  
Price-List.

Mention "Manufacturers' Record."



# Porter Mfg. Co., Limited.

HOWARD G. WHITE, Pres.  
J. H. CHILDS, Vice-President.  
G. A. PORTER, Sec. & Treas.

SYRACUSE, N. Y., U. S. A.

MANUFACTURE

—STATIONARY AND PORTABLE—

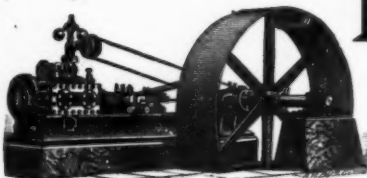
## ENGINES

(ALL SIZES.)

For Every Duty.  
Centre Crank Stationary.  
Trunk Bed. Double.  
Variable Cut-off. Square Bed.

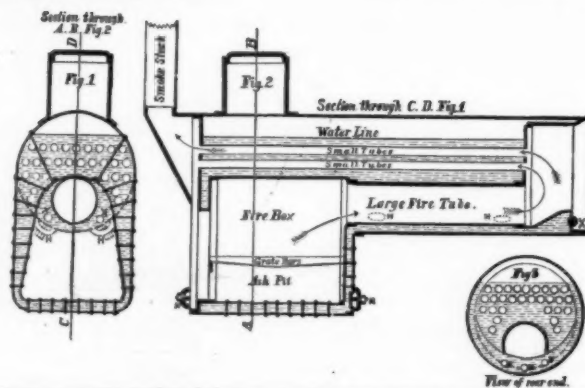
## BOILERS

That Cannot Explode,  
and have many other  
Valuable Features.



Illustrated Catalogue and Prices upon  
Application.

—Mention "Manufacturers' Record."—



### LIST OF SOUTHERN AGENTS:

WM. R. EMERSON, Baltimore, Md. S. S. NASH & CO., Tarboro, N. C. VALK & MURDOCH,  
Charleston, S. C. A. G. SMITH, Live Oak, Fla. DAWSON & EVANS, La Grange, Ga. LYONS  
THOMAS HARDWARE CO., Paris, Texas. R. L. COBB & CO., Little Rock, Ark. ATKINSON  
HARDWARE CO., Fort Smith, Ark. M. FALER & CO., Hazlehurst, Miss. KENTUCKY  
MACHINERY CO., Louisville, Ky.



IF YOU WANT ANY  
**FAST FEEDING  
PLANING MILL  
MACHINERY** APPLY TO  
THE PREBLE MACHINE WORKS CO.  
38 & 40 W. MONROE ST. CHICAGO, ILLS.

## CORDESMAN, MEYER & CO.

171 and 173 West Second Street, CINCINNATI, OHIO.

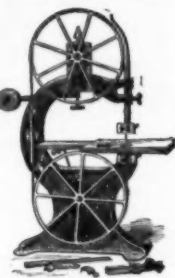
— FINE GRADES OF LATEST —

### Wood Working Machinery

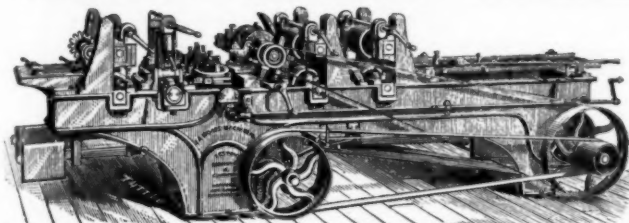
OF EVERY DESCRIPTION.

Planing Mills, Furniture and Chair Factories,  
Carriage, Wagon and Agricultural Works.

Write for our latest Catalogue and Price List. Correspondence solicited.

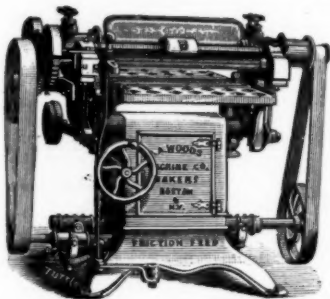


## WOOD-WORKING MACHINERY

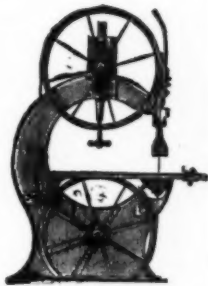


FOR  
Railroad Shops,  
Planing Mills,  
Car Builders,  
Cabinet, Carriage,  
Sash, Door  
Blind Makers.

We received eight First-Class GOLD MEDALS at the World's Exposition, at New Orleans, La., on our Machinery, awarded by an Experienced and Practical Committee.



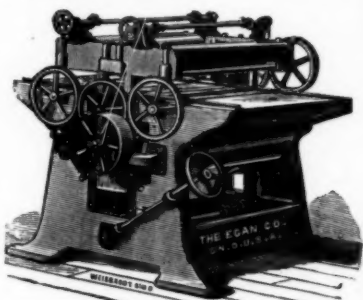
Illustrated Catalogue  
on application.



### S. A. WOODS MACHINE COMPANY,

WAREHOUSES:

91 LIBERTY STREET, 172 HIGH STREET, 61 S. CANAL STREET,  
New York. Boston. Chicago.



### Wood-Working Machinery

Of the Latest and most Improved Designs for  
Planing Mills, Furniture Factories, Chair  
Factories, Car and Agricultural Works,  
Carriage and Buggy Shops and

GENERAL WOOD WORKERS,

MANUFACTURED BY

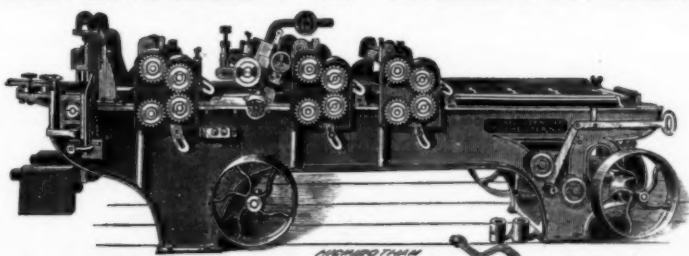
### THE EGAN CO.

(Successors to the Cordesman & Egan Co.)

228 to 240 W. Front St. Cincinnati O., U. S. A.

Thos. P. Egan, Pres. Ed. Ruthven, Sec. F. Danner, Sup.

## CONNELL & DENGLE.



Manufacturers of WOOD-WORKING MACHINERY. Patent improved Planers and Matchers, Pony Planers, Bevel Sawing Machines, Solid Plate and Segment Re-Saws, Box Makers' Machinery a Specialty. Cor. Mill and Furnace Streets, Rochester, N. Y.

## I. E. Merritt Machinery Co.

— LOCKPORT, N. Y. —

Manufacturers of

\* IMPROVED \*

### Handle,

\* Stave, \*

### Heading,

AND

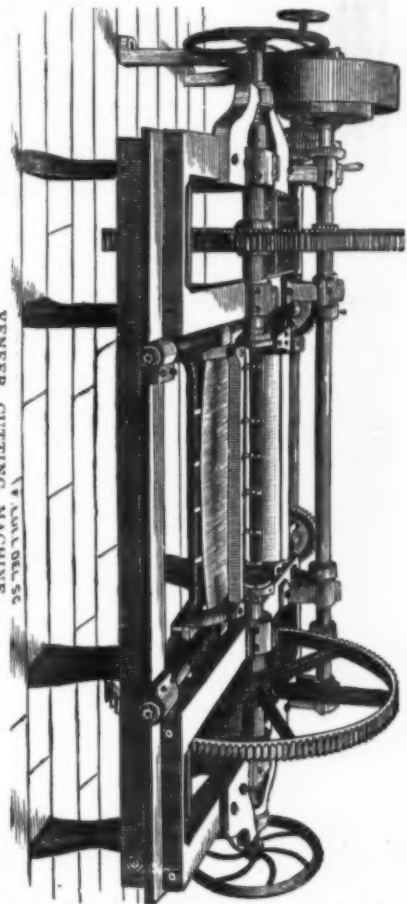
### FRUIT-BASKET

### Machinery

ALSO,

### MERRITT'S

### Veneer Cutting Machine.



This machine is specially adapted for cutting Veneers from the round log for any purpose, including Berry and Fruit Boxes or Baskets. Is strong, durable, constructed entirely of iron and steel, and is guaranteed to be entirely satisfactory. Send for complete description and prices. We solicit correspondence, and will give it our prompt attention. When you write mention the "Manufacturers' Record."

## Stearns Mnfg. Co.

— ERIE, PA., U. S. A. —

BUILDERS OF

### CIRCULAR SAW MILLS,

Capacity 15,000 to 450,000 feet per day. Complete outfits planned and furnished.

### ENGINES, 15 to 800 HORSE-POWER. BOILERS OF IRON OR STEEL.

### BAND SAW MILLS, with Friction or Steam Feed.

STEARNS' Fractional Head Blocks, Edgers, Cut-Off Saws, Trimmers.

— The Wilkin Pony Gang. —

No foundation. Capacity 30,000 to 40,000 feet of Flooring per day. The WILKIN HEAVY GANG SAW MILL for large mills. Lath and Picket Mills, Bolters, Conveyors, &c.

ESTABLISHED 1845. The Oldest Saw Manufactory in the South.



### TOLAND & SON, 85 N. Front Street, Baltimore.

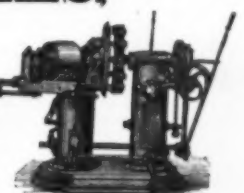
Particular attention paid to Large Circular Work. We warrant our Circular Saws to stand more strain, without buckling or cracking, than any other make. We make all kinds of Tough-Tempered Circular, Mill, Cross-Cut, Band and Drag Saws, Planer Knives, Ensilage, Feed, Tobacco, Meat Choppers, and other Knives made to pattern, and Moulding Bits warranted equal to the Best. N. B. — We make no charge for hammering any Large Circular Saw that we can't make "go." GIVE US A TRIAL, and for toughness of temper, durability and quality of material, compare our work with the best you have ever used.

### E. & B. HOLMES,

BUFFALO, N. Y.,

MANUFACTURERS OF

### Barrel MACHINERY.



CHAMFERING, HOWELING, AND CROZING MACHINE.

HEAD ROUNDER.

Chamfering, Howeling and Crozing Machines, Stave Dressers, Stave Jointers, Hoop Drivers, Crozing Machines, Heading Jointers, Heading Dressers, Beer Stave Benders, Stave Cutters, Leveling and Trussing Machines, Cylinder Stave Saws, Heading Saws, etc.

— STAVE, BARREL, KEG AND HOGSHEAD MACHINERY. —

Correspondence solicited. Mention this paper.





### PIPE FITTERS' TOOLS.

Hand and Power Pipe-Cutting and Threading Machines, Pipe Stocks and Dies, Pipe, Taps, Drills and Reamers, Machinists' Die-Plates, Machinists' Taps, Solid Bolt Dies, Pipe-Tongs, Adjustable Tongs, Pipe-Wrenches, Monkey-Wrenches, Gas-Fitters' Pliers, Augers, Pipe-Cutters, Pipe Vises, Chisels, Ratchets, Gas-Fitters' Pumps, Boiler Tube Brushes and Cleaners, Boiler Tube Expanders, Hydraulic Punches and Jacks, Patent Hand Hoisting-Machines, Oilers, Hammers, &c.

SEND FOR CATALOGUE AND PRICE-LIST

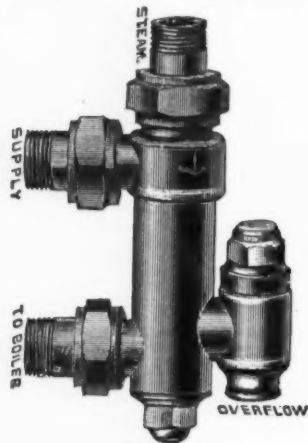
—TO—

**PANCOAST & MAULE,**

243 and 245 South Third Street,

PHILADELPHIA.

Mention this Paper when you Address us.



— THE —  
**American Injector Co.**

DETROIT, MICH., U. S. A.

This cut represents our Improved Automatic Live Steam Injector, the simplest in construction, but most perfect

**Automatic Injector**

IN THE MARKET.

Every Injector guaranteed, and we send on trial to reliable parties. Correspondence solicited.

**For Sale Cheap**

15 H. P. Boiler and Engine.  
One 30 to 40 H. P. Locomotive Boiler.  
All kinds of MACHINERY on long time.

WM. C. Codd,  
306 Aliceanna St., - Baltimore, Md.



**W. J. CLARK & BRO.**  
Manufacturers of  
**Hydrants.**

These Hydrants are made of the best material, and are guaranteed to be entirely non-wasting and non-freezing. The works of these Hydrants can be taken out and repaired without breaking the ground. Send for circular.

38 N. Holliday Street,  
BALTIMORE, MD.

**BUCKEYE**  
**BOILER & BRIDGE WORKS,**

CLEVELAND, OHIO.

Manufacturers of all Kinds of

**WROUGHT IRON BRIDGES.**

also, BOILERS, TANKS, STILLs,

**BLAST FURNACES,**

and all kinds of Plate Work,

**Jail Cells, Bank Vaults,**

and **HEAVY GIRDERS** for Buildings.

Estimates Furnished upon Application.

Established 1793.



**H. BALDERSTON & SON,**

MANUFACTURERS OF

**WIRE GRATING FOR WINDOWS**

Doors and Office Railing, Wire Screens for Banks, Churches and Store-Fronts, Woven Wire, Wire Tree-Guards, Sieves, Screens for Coal, Sand, &c.

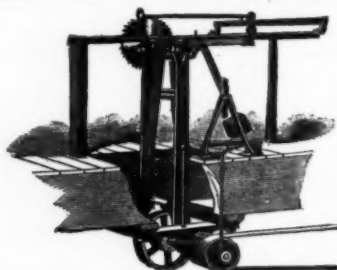
66 S. Calvert Street, Baltimore.

**WIRE RAILING**

and Ornamental Wire Works.

DUPUR & CO. 36 N. Howard St., Baltimore.

Wire Railing for Cemeteries, Lawns, Gardens, Offices and Balconies; Window Guards, Tree Guards, Wire Cloth, Sieves, Fenders, Cages, Sand and Coal Screens, Iron Bedsteads, Chairs, &c.



**New Swing Cross Cut Saw,**

with rigid iron frame and steel arbor. The frame is mounted on a heavy iron base, bolted to the joist under the floor. Saw Mill Mandrels, Saw Machinery, and all sizes of Saw Arbors.

R. M. McBETH & CO.

185 Pearl Street, Cincinnati, Ohio.

**THE BAY LINE**

—FOR—

**FORTRESS MONROE, NORFOLK and the SOUTH.**

The Bay Line comprises the New and Elegant Steamers

"VIRGINIA," "CAROLINA" and "FLORIDA."

All the Comforts and Luxuries of a First-Class Hotel are afforded the Traveler. Spacious and Elegant Saloons and Staterooms, furnished with an especial view to comfort. Unsurpassed Cuisine, which is made a specialty with this Line. Elegant service and courteous attention. Steamers leave Baltimore daily except Sundays at 9 P. M.

At Old Point Comfort is located the SPLENDID HYGEIA HOTEL, a Delightful Resort at all Seasons of the Year. For Tickets and Information, apply at Company's Office,

157 W. BALTIMORE ST., BALTIMORE,

Or on Board of Steamers.

D. J. HILL, Superintendent.  
E. BROWN, General Ticket Agent.

**The CAMERON STEAM PUMP**

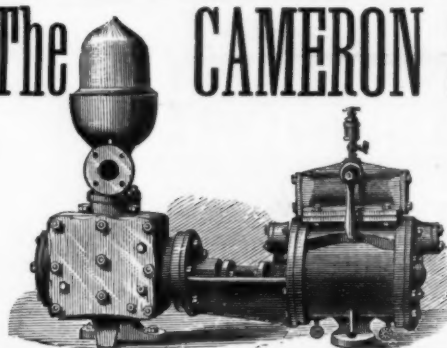
Is the Standard of Excellence

AT HOME AND ABROAD.

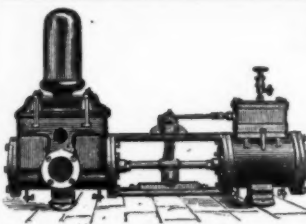
THE A. S. CAMERON

Steam Pump Works,

Foot of East 23d St., New York.



**STEAM PUMPS**  
SEND FOR PRICES.  
VALLEY MACHINE CO. EASTHAMPTON, MASS.



**BLAKESLEE MANFG. CO.**

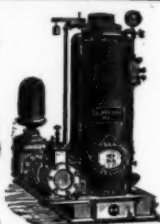
67 WASHINGTON ST.,

DU QUOIN, ILL.

**STEAM PUMPS**

FOR ALL PURPOSES.

SEND FOR CATALOGUE.



The **STANDARD**  
**Steam Pumps.**

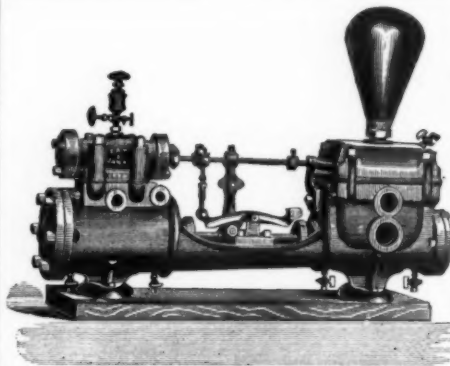
From KNOWLES' PATENTS with KNOWLES' VALVE MOTION, are the **STRONGEST** and **MOST DURABLE** Pump for every duty. MINERS, BREWERS, MANUFACTURERS IN THE SOUTH write for Prices and Descriptive Catalogue to

**WHEELER & TAPPAN,**

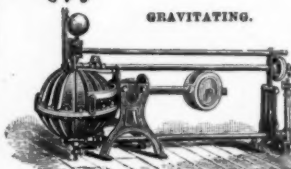
(Sole Manufacturers.)

Office, 88 WEST LAKE STREET,  
CHICAGO, ILL., U. S. A.

Works, 49, 51, & 53 N. Jefferson street.

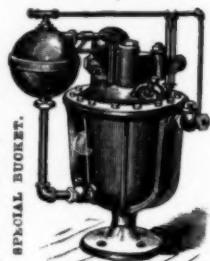


**THE ALBANY STEAM TRAP COMPANY'S**  
**SPECIAL BUCKET**  
**And GRAVITATING Traps.**



GRAVITATING.

Automatically drain the water of condensation from HEATING COILS, and returns it to the boiler, whether coils are above or below the water level in boiler, doing away with pumps and other mechanical devices for such purposes.



SPECIAL BUCKET.

Also, "Blessing's Patent Renewable Seat Valves."

**ALBANY STEAM TRAP COMPANY, Albany, N. Y.**

Office and Works, 78 and 80 Church Street.



**Patapsco**  
**FLOURING MILLS.**

—ESTABLISHED 1774.—

This Company owns and operates three Mills, as follows:

Patapsco Mill A, at Ellicott City, Md.

Patapsco Mill B, at Baltimore, Md.

Patapsco Mill C, at Orange Grove, Md.

—Having a daily capacity of 1,800 barrels.—

The value of Flour depends on the proportionate quantity of Gluten, Starch, Sugar and Phosphate of Lime. Maryland and Virginia Wheat, from which our **PATENT ROLLER FLOURS** are manufactured, is unequalled for its purity and superior quality of allible properties.

ASK YOUR GROCER FOR

PATAPSCO SUPERLATIVE,  
PATAPSCO CHOICE PATENT,  
PATAPSCO FAMILY,

PATAPSCO EXTRA,  
CAPE HENRY FAMILY,  
NORTH POINT FAMILY,

CHESAPEAKE EXTRA,  
BEDFORD FAMILY,  
ORANGE GROVE EXTRA.

**C. A. GAMBRILL MFG CO.**

Office, 32 Commerce St., Baltimore, Md.

**CHESAPEAKE & OHIO RAILROAD**

Leave Washington, B. &amp; P. Station:

5.30 P. M.—Every day, Fast Express. Only solid train between Washington and Louisville with Pullman Palace Cars. Pullman Cars to Cincinnati.

7.00 A. M.—Every week day, Mail for principal Virginia Cities and Lexington, Ky., Cincinnati, Louisville and the West.

**CHESAPEAKE & OHIO TICKET OFFICE IN WASHINGTON,**  
513 PENNSYLVANIA AVENUE.

H. W. FULLER, GENL. PASSENGER AGENT.

C. W. SMITH, GENL. MANAGER, RICHMOND, VA.

**MONON ROUTE**

Louisville, New Albany &amp; Chicago Railway Company.

The Pullman Car Line between **CINCINNATI, INDIANAPOLIS, CHICAGO**  
AND THE NORTHWEST.**2 FAST EXPRESS TRAINS LEAVE CINCINNATI**  
From Station, cor. 5th and Hoody Sts. (Central Time.)7.35 A. M. **CHICAGO DAY EXPRESS** (Except Sunday)  
For Indianapolis, Monon, Frankfort, Michigan City, Chicago, Milwaukee, St. Paul, Minneapolis and all points in the Northwest.6.45 P. M. **CHICAGO NIGHT EXPRESS** (Daily)  
For Indianapolis, Chicago, Milwaukee, St. Paul, Minneapolis, Omaha, Council Bluffs, Davenport, Rock Island and all points in the Northwest.

PULLMAN SLEEPING CARS AND DAY COACHES THROUGH TO CHICAGO. BAGGAGE CHECKED TO ALL POINTS IN NORTHWEST.

**JOHN H. GARRISON**, General Southern Passenger Agent, 129 Vine Street, Burnet House Block, CINCINNATI.**JOHN B. CARSON**, Vice-President and General Manager, CHICAGO. **WM. S. BALDWIN**, General Passenger Agent, CHICAGO.**C. H. & D. R. R.** Cincinnati, Hamilton and Dayton Railroad.  
From and to **CINCINNATI.**TOLEDO, SAGINAW, DETROIT, TORONTO, AND ALL POINTS IN MICHIGAN AND CANADA.  
NIAGARA FALLS,

CONNEERSVILLE, RUSHVILLE, INDIANAPOLIS, DECATUR, PEORIA, AND ALL DANVILLE, BLOOMINGTON, POINTS WEST and Northwest.

RICHMOND, LOGANSPOET, CHICAGO, MONON, AND ALL POINTS IN THE NORTHWEST.  
DELPHI,

FORT WAYNE, KALAMAZOO, GRAND RAPIDS, MACKINAW, AND ALL PETOSKEY, POINTS IN MICHIGAN.

**PULLMAN PALACE SLEEPERS AND PARLOR CARS.**

For information apply at any Railroad Office in the United States or Canada. In Cincinnati, Ohio, at Offices: N. W. Corner Fifth and Vine Streets, or Depot, Fifth and Hoody Streets, or address

J. F. MCCARTHY, Agents at **SAM'L STEVENSON**,  
J. R. MCCORD, 5th and Vine Sts., General Ticket Agent.  
C. L. PARIS, Cincinnati, O.**SHENANDOAH VALLEY ROUTE.**

Traversing the most Picturesque Section of America, replete with Scenes of Historic Interest and

**NATURAL BEAUTY.**The Popular Trunk Line and Most Desirable Route for **TOURISTS AND TRAVELERS**  
Between the North and South.STOP-OVER ALLOWED ON ALL TICKETS AT **LURAY and NATURAL BRIDGE** AND OTHER POINTS OF INTEREST.**O. HOWARD ROYER**, Gen'l Pass. & T'k't Ag't, ROANOKE, VA.**THE NEW YORK****MOIST LETTER COPYING BOOK.**

(Patented Nov. 26, 1873.)

Uniform Copies. Saves Time.

NO WATER. NO BRUSH. ALWAYS READY.

**E. L. FARGO,**

Sole Manufacturer,

59 Beekman St., New York.

In the use of "This Book," the great annoyance of water, brushes, cloths, etc., is done away with; the book is ready at all times to copy any number of letters at once. Parties using same, clear, distinct and uniform.

pronounce it the very thing they want; the copies are

**PRICES REDUCED.**

Send for Price-List.

**S. W. RITTER, Millwright,**

—BUILDER OF—

Flour and Saw Mills, Drug and Chemical Works, Portable Mills, Smut Machines, Mill Stones, Bolting Cloths, Brushes, Guano Fertilizer Mills, and General Mill Supplies,

261 S. Caroline Street, BALTIMORE, MD.

**BAY STATE HOUSE,**

WORCESTER, MASS.

**W. L. SHEPARD, Proprietor.**

This House has been thoroughly repaired and renovated, and will be KEPT STRICTLY FIRST-CLASS IN EVERY RESPECT.

The Only First-Class Hotel in the City.

Rates, \$3.00 and \$3.50 per day

**Massasoit House,**

SPRINGFIELD, MASS.

**M. & E. S. CHAPIN, Proprietors,**

Near the Union Depot.

**THOROUGHLY FIRST-CLASS.****Colonnade Hotel,**

Chestnut St., Cor. 15th,

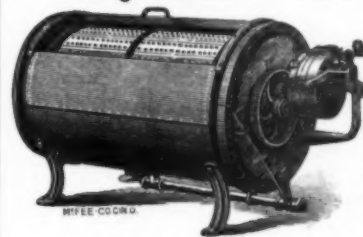
One block from new Penna. Railroad Depot,

**PHILADELPHIA.**

H. J. &amp; G. R. CRUMP.

**A FAVORITE RESORT**  
FOR ALL  
SOUTHERN TRAVEL.**Laundry Machinery.**

Largest Stock. Latest Improvements. Fullest Line.

Washing Machines,  
Ironing Machines,  
Centrifugal Machines,  
Mangles, Wringers, etc.  
**BOILERS AND ENGINES.**

—OUTFITS FOR—

**Hotels and Public Institutions**

—A SPECIALTY.—

**The A. M. DOLPH CO.**295 Wabash Avenue,  
CHICAGO, ILL.Cor. 9th St. and Freeman Ave.,  
CINCINNATI, O.**The True Idea of Assurance.****Women's Mutual Insurance and ACCIDENT COMPANY.****OFFICERS AND**  
ELIZABETH B. PHELPS, Pres.  
MARGARET HOLCOMBE, Vice-Pres.  
EMILY TAYLOR,  
Elizabeth S. Roberts, H. Louise Gates,**DIRECTORS:**  
ELIZABETH HARDENBURGH, Treas.  
CORNELIA KAMPING, Actuary,  
Charlotte Mulligan, M. F. Hoagland.ALFRED K. HILLS, M. D., 465 Fifth Avenue.  
JOHN A. KAMPING, Attorney and Counsel, 120 Broadway, New York.

MEDICAL EXAMINERS.

MARY PUTNAM JACOBI, M. D., 110 W. 34th Street.

Incorporated under the Laws of New York.

**ITS OBJECT.**  
This company is the pioneer in throwing down the bars of unjust discrimination against women in life insurance. Statistics and common observation prove mortality to be in favor of females at every age, and married as well as single. To remove this prejudice, and to secure to women an equal estimation in her insurability, the promoters of this enterprise have devoted themselves. Consistently with this principle **WOMEN AND MEN** are equally insured in this company without discrimination on account of sex.**ITS MEMBERSHIP**  
comprises persons between the ages of 16 and 60, of approved physical condition. The Life Class is separate and distinct from the Accident Class, members being liable for losses only occurring in the class to which they belong.**ITS PLAN**  
secures insurance at cost, and embraces the best features of similar associations, with such improvements added as enlightened experience has shown to be desirable for the member's advantage and the security of the association.**ITS SAFETY AND SECURITY**  
consists in its **ECONOMICAL** system, its **IMPOSSIBILITY** of insolvency, and its **SECURITY RESERVE FUND.****FINALLY.**  
This company avoids complicated schemes and plans by means of which impossible results are promised. Its contracts are plain, easily fulfilled and liberal. It issues the following forms:

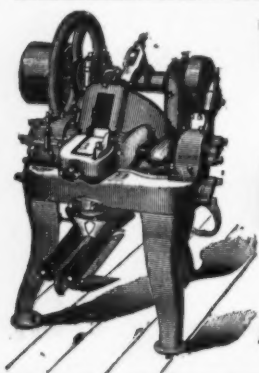
1. **Ordinary Life Policy**, \$100 to \$10,000.
2. **Ordinary Accident Policy**, \$5,000 death indemnity; \$25 weekly.
3. **Combined Life and Accident Policy.**
4. **\$500 Savings Bond.**

**BANKERS:**  
BANK OF THE METROPOLIS, New York City.  
DEPOSITORY OF RESERVE FUND:  
FARMERS' LOAN AND TRUST CO., New York City.  
The officers would be pleased to furnish any further particulars which may be desired in relation to the Company's affairs, or the way to obtain a policy.Agents are desired in every city, village and district throughout the healthful sections of the country. Address all communications to the  
**WOMEN'S MUTUAL INSURANCE AND ACCIDENT CO.,**  
128 BROADWAY, NEW YORK.**JOSEPH B. MATTHEWS & CO.****Engineers and Machinists**

41 CENTRE MARKET SPACE,

BALTIMORE MD.





## The American Nail Machine Co.

MANUFACTURERS OF  
AMERICAN PATENT

### Improved Cut Nail Machines,

AUTOMATIC NAIL SELECTORS and NAIL  
FACTORY SUPPLIES,

ASHTABULA, - - - OHIO.

Prices and particulars furnished on application.

We offer you the experience of 15 years, un-  
biased by interest in any patent. Write us,  
we will make specifications for you or do your work,  
or both.

## ENGINEERS and CONTRACTORS.



### E.H. COOK CO. LIMITED

### WARMING.

Steam & Hot Water.

ROCHESTER, N. Y.

Hot Water is the system for the South. Cor-  
respondence invited. Economy, Efficiency,  
Durability, Best Methods. Household a  
Specialty. 500 References.

## HOWARD IRON WORKS,

BUFFALO, N. Y.,

MANUFACTURERS OF

Schlenker's Automatic Revolving-Die

### BOLT CUTTER

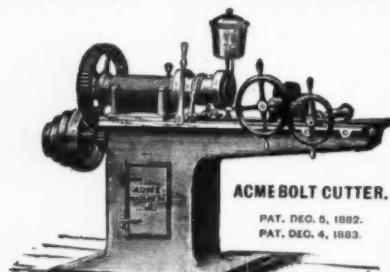
And Nut Tapping Machines

In use in the principal Railroad and Machine shops in the Country.

SEND FOR CIRCULAR PRICE-LISTS.

## ACME MACHINERY COMPANY,

CLEVELAND, OHIO.



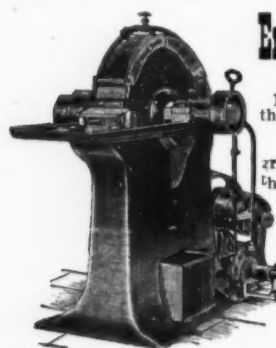
ACME BOLT CUTTER.

PAT. DEC. 5, 1882.  
PAT. DEC. 4, 1883.

#### Advantages of the "Acme" Bolt Cutter:

Large bearing on top of Dies by using a Cap. Fine  
adjustment by differential screw. Positive Toggle  
Lock. Die-ring connected to Barrel. Positive  
Motion. Every part exposed to view, it cannot clog  
with chips or scale. Quickness of changing Dies,  
(in less than a minute.) No springs used. Index on  
Head so a fit can be cut at once. Cheapness of Dies.  
Advantage of Plain and not the disadvantage of Case  
Dies. Reversible Dies. Even number of Dies and  
ahead of center. All wearing parts are tempered  
Steel, made to Jigs and Standard Gages, and are in-  
terchangeable. Dies cut in one Head will fit any  
other, and where more than one Head is used this is  
a very vital point. The ACME Head can be put on

almost any Bolt Cutters, and parties having other make of machines will find a great improvement by  
putting an "ACME" Head and Dies on it.



### Emery Wheel Tool Grinder.

Pat. Sept. 23th, 1893.

Four sizes of each of  
these designs.

Grinds much FASTER than  
grindstones and will soon save  
their cost. WHEELS ARE MADE  
TO RUN IN WATER. Will ship  
on their merits for 30 days  
trial, and if not satisfactory can  
be held subject to our order.  
We make the largest  
line of machinery with  
Emery wheels running  
in water of any compa-  
ny in the world.



SPRINGFIELD GLUE & EMERY WHEEL COMPANY,

SPRINGFIELD, MASS.

## D. SAUNDERS' SONS

MANUFACTURERS OF

Pipe Cutting and  
Threading Machines,

For Pipe Mill and Steam  
Fitters' Use.

Tapping Machines

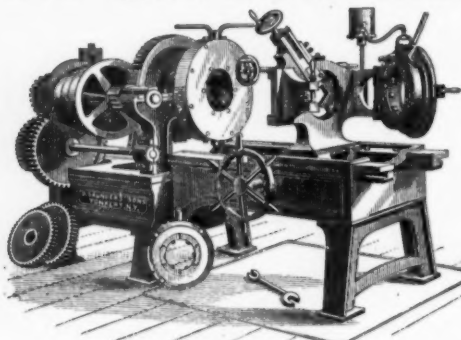
For Steam Fitting. Also,

STEAM AND GAS FITTERS  
HAND TOOLS,

Atherton Street.

Send for Catalogue B.

YONKERS, N. Y.



SEND FOR CIRCULARS.

## SOUTHWARK FOUNDRY AND MACHINE CO.

ENGINEERS AND MACHINISTS,

WASHINGTON AVE. AND FIFTH ST., PHILADELPHIA, PA.

PORTER-ALLEN and SOUTHWARK ENGINES, BOILERS and TANKS

Blowing Engines, Bessemer Converters, Gas Apparatus,  
SUGAR MACHINERY HYDRAULIC MACHINERY, &c., &c.

## WARMING AND VENTILATION.

A Perfect Success by Our Apparatus.

→ 24 SIZES ←

Low Pressure Generators

PRETTIEST DIRECT RADIATION.

LARGEST MANUFACTURERS OF INDIRECT AND  
WINDOW RADIATION.

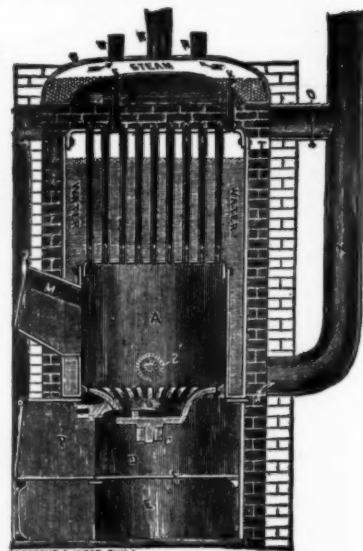
## LIGHT'S PATENTS

The Most Popular with the Trade.  
Descriptive and Trade Circulars on  
Application. Plans and Estimates  
by a Skilled Engineer.

## EUREKA Steam Heating Co.

202 State St. ROCHESTER, N. Y.

Our sales from year to year have doubled with  
good satisfaction everywhere. Send for Circulars.



## THE BILLINGS & SPENCER CO. HARTFORD, CONN.

MANUFACTURERS OF  
STANDARD MACHINE WRENCHES  
SINGLE AND DOUBLE END  
IN 16 SIZES.

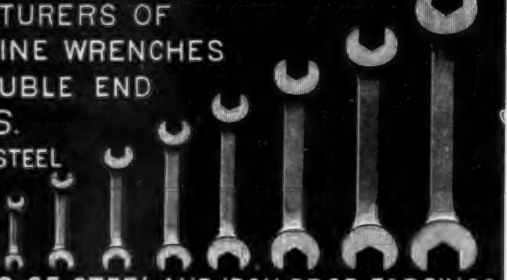
DROP FORGED OF BAR STEEL

TAKING NUTS FOR 1/4 INCH

UP TO AND INCLUDING

NUTS FOR 1 1/4 INCH BOLTS

AND ALL DESCRIPTIONS OF STEEL AND IRON DROP FORGINGS.



## The NORWALK ENGINES And Boilers

In Sizes from 4 to 60 H. P.

THESE ENGINES CANNOT BE SURPASSED FOR

SIMPLICITY OF CONSTRUCTION

Nor Perfection of Workmanship.

The smaller sizes are especially designed for running light  
machinery, such as Printing Presses, Cheese Factories,  
Wood Sawing Machines, Meat Choppers, &c.

Norwalk Machine Works, Norwalk, O.



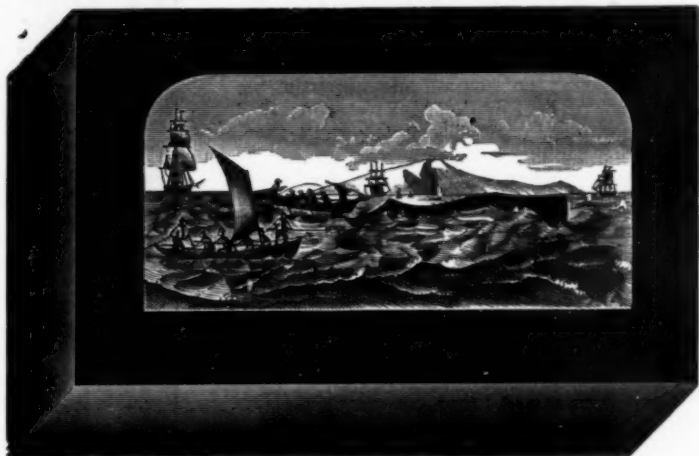
The Oldest Oil House in the City. Business Established 1832 (on Present Premises.)

## WM. C. ROBINSON & SON,

81 SOUTH ST., BALTIMORE, MD.

Manufacturers and  
Wholesale Dealers in

# OILS!



Specialties—Oils for Cotton and Woolen Mills, Railroads, Tanners' and Machinery Use.

Our Colophine Cylinder Oil is the best in use, 65° fire test, 28° gravity. Perfect Engine Oil 60° fire test, 20° gravity. Colophine Engine Oil 55° fire test, 23° gravity. Agent for Downer's Spindle, Champion and Mineral Spinn, Meriam & Morgan's Paraffine Co's Paraffine, William's Odorless Lubriphene Oils. Also Manufacturers' Agent for 25°, 28° and 30° Paraffine, and 31° Neutral Bloomless Oils. Correspondence solicited.

## A. HOEN & CO.

LITHOGRAPHERS, BALTIMORE MD.

ESTABLISHED 1835.



Our facilities for the production of

### ARTISTIC Color Work

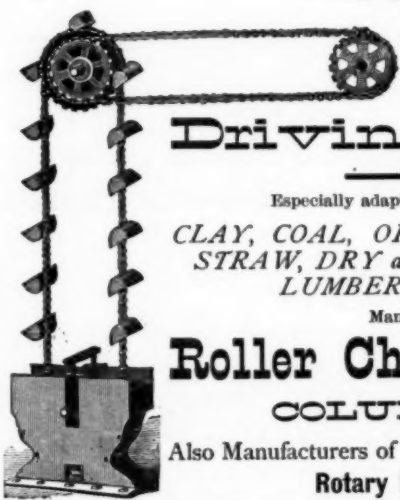
AND ALL STYLES OF  
Fine Commercial Engraving  
Are Unsurpassed.

All work executed under careful and personal supervision at prices consistent with first-class productions. Sole proprietors of the CELEBRATED LITHOCAUSTIC PROCESS Branch Establishment: Hoen Building, RICHMOND, VA.

## Roller Detachable Chain Belting

—FOR—

Elevators, Conveyors,  
Carriers, and for  
Driving Purposes.



Especially adapted for the economical handling of

CLAY, COAL, ORES, BROKEN STONE, ICE,  
STRAW, DRY and SPENT TAN, SAWDUST,  
LUMBER, GRAIN, SEEDS, Etc.

Manufactured and Sold by

### Roller Chain Belting Co.

COLUMBUS, OHIO.

Also Manufacturers of the Legg Coal Mining Machines and Rotary Power Coal Drills. Send for Illustrated Catalogue and Price-List.

## ATLANTA RUBBER COMPANY,

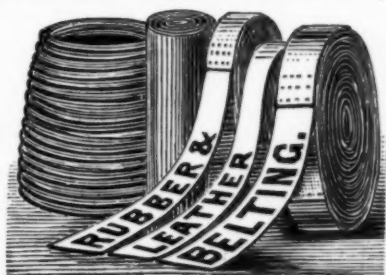
ATLANTA, GA.

RUBBER BELTING,  
PACKING, HOSE, &c.

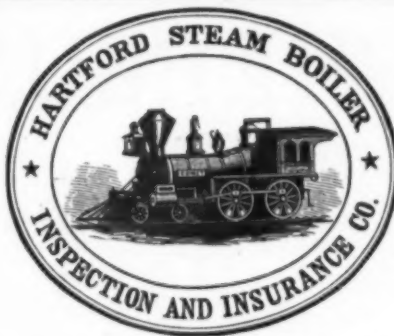
PURE OAK LEATHER BELTING,  
MILL SUPPLIES AND  
ALL KINDS OF RUBBER GOODS.

AGENTS:

NEW YORK RUBBER CO'S BELTING, &c.  
HOYT'S LEATHER BELTING.  
NEW JERSEY RUBBER SHOE CO.



—ISSUES—  
POLICIES OF INSURANCE  
AFTER



A CAREFUL INSPECTION  
OF THE

BOILERS,

Covering all  
Loss or  
Damage to

## Boilers, Buildings and Machinery

ARISING FROM STEAM BOILER EXPLOSIONS.

The Business of the Company Includes All Kinds of Steam Boilers.

Full information concerning the plan of the Company's operations can be obtained at the  
COMPANY'S OFFICE, Hartford, Conn., or at any agency.

M. ALLEN, Pres't. W. B. FRANKLIN, Vice-Pres't. J. B. PIERCE, Sec'y.

—BOARD OF DIRECTORS—

J. M. ALLEN, President.  
LUCIUS J. HENDREE, President Aetna Fire Insurance Co.  
F. W. CHENEY, Asst. Treas. Cheney Bros. Silk Mfg. Co.  
CHARLES M. BEACH, of Beach & Co.  
DANIEL PHILLIPS, of Adams Express Co.  
G. M. BARTHOLOMEW, Pres't American National Bank.  
R. W. H. JARVIS, Pres't Colt's Fire Arms Mfg. Co.  
THOMAS O. ENDERS, Secretary Aetna Life Insurance Co.  
LEVERETT BRAINARD, of Case, Lockwood & Brainard.  
GEN. WM. B. FRANKLIN, Vice-President Colt's Patent Fire Arms Manufacturing Co.  
GEO. CHROMPTON, Crompton Loom Works, Worcester.  
WILLIAM ADAMSON, of Haeder, Adamson & Co., Phila.  
HON. THOMAS TALBOT, Ex-Governor of Massachusetts.  
NEWTON CASE, of Case, Lockwood & Brainard, Hartford.  
NELSON HOLLISTER, of State Bank, Hartford.  
CHAS. T. PARRY, of Baldwin Locomotive Works, Phila.  
HON. H. C. ROBINSON, Attorney-at-Law, Hartford.

LAWFORD & McKIM, Agents for Maryland, 22 Second St., Baltimore, Md.

J. R. WORSWICK, Pres't. E. LEWIS, Vice-Pres't. JNO. A. PRINDLE, Sec'y & Treas.

## WORSWICK M'FG CO.

MANUFACTURERS OF  
MALLEABLE AND CAST IRON FITTINGS,  
AND BRASS GOODS.

JOBBERS OF

Plumbers, Gas & Steam Fitters' Tools and Supplies.

AGENTS FOR

IRON PIPE AND BOILER TUBES.

Corner St. Clair and Water Streets, CLEVELAND, O.

## WALKER MANFG. CO.



Shafting,  
Hangers,  
Pulleys.

Pulley Castings and  
Machine-Molded

### GEARING

A SPECIALTY.

Cleveland, - Ohio.

Estimates furnished. Write  
for Gear and Price-Lists A.



## NIAGARA PHOSPHATES MIXER,

D. U. JENNINGS. - - - 108 Liberty Street, N.Y.

REPRESENTING

UNION FOUNDRY and MACHINE SHOPS,

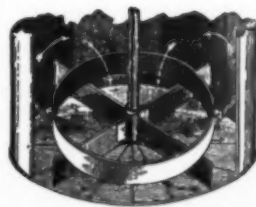
SOLE MANUFACTURERS,

ROCKAWAY,

NEW JERSEY.

D. U. JENNINGS,

Representing  
M. HOAGLAND.



## THE SCIENTIFIC PORTABLE FORGE

—AND—

### BLACKSMITH HAND BLOWERS.

GUARANTEED

The Lightest Running! The Strongest Blast!  
The Most Durable!

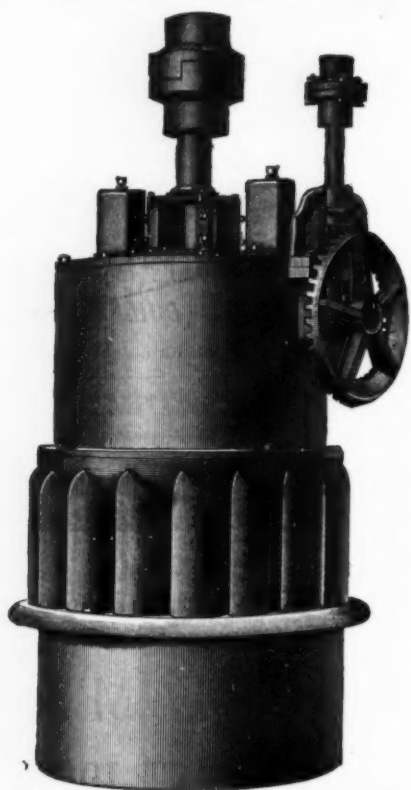
ADAPTED TO ALL KINDS OF WORK,  
AND MADE IN STYLES AND SIZES TO SUIT.

THE FOOS MANUFACTURING CO., - - Springfield, Ohio.





# THE "HERCULES"



→ GET THE BEST. ←

A good Water Wheel increases the value of your whole plant. Get the best at first and avoid the expense and delay of changing wheels. A good wheel will serve you well for twenty years. The best is the cheapest,—it does more work, lasts longer, and costs no more for gears and setting than a common wheel. The HERCULES gives the most power for its size, and the highest average percentage from full to one-half gate, of any wheel ever made.

SEND FOR CATALOGUE No. 3.

**HOLYOKE MACHINE CO., WORCESTER, MASS.**

Wheels Now in Use in Holyoke, February 1st, 1885.

Name of Wheel.	Number.	Horse-Power Furnished.
Hercules.....	53	10,576
Boyden.....	38	5,398
American.....	10	825
Tyler.....	10	311
Hunt, Waite & Flint.....	7	375
Riflon.....	6	440
Jonval.....	4	655
Swain.....	1	160
New American.....	1	65
Acusten.....	1	75
Victor.....	2	150
Total.....	133	19,030

**EAGLE & PHENIX MANUFACTURING CO.,**

COLUMBUS, GA., Feb. 25, 1885.

HOLYOKE MACHINE CO., STEPHEN HOLMAN, Treas.:

Dear Sirs—Within the past four years I have ordered four "Hercules" wheels, all of which have given the purchasers entire satisfaction. Three of the wheels are on regular duty in the Eagle & Phenix Mills. The first wheel ordered did so well that a "Hercules" wheel has been added each time a new wheel was wanted. In Eagle & Phenix Mills I supervise twenty water wheels of six different styles. The "Hercules" is by far the most durable and best made wheel in use here, and, in fact, I know of no wheel its equal, mechanically. It is all that can be desired in economy of water. In fact, it is a strictly first-class wheel in every way, and the wheel to buy, use and depend upon. Yours truly, JOHN HILL.

**CONNECTICUT RIVER PULP MILL.,**

HOLYOKE MACHINE CO.: HOLYOKE MASS., November 24, 1884.

We are now using 22 "Hercules" wheels, under heads from 12 to 40 feet, and they have always given satisfaction. We have used a variety of Turbines, but where economy in the use of water is required nothing equals the "Hercules." In every respect they are first class.

D. H. & J. C. NEWTON.

**GEORGE R. DICKINSON PAPER CO.,**

HOLYOKE MACHINE CO.: HOLYOKE, MASS., December 17, 1884.

Gentlemen—We started our mill with three "Hercules" wheels. We raise the gates Monday morning and close them Saturday night. They have never cost us a cent for repairs nor caused us a moment's delay. We want nothing better. Yours very truly, GEORGE R. DICKINSON, Treas.

# THE BERRYMAN Patent Feed Water Heater and Purifier

The Shells of the Berryman are of C H No. 1 iron, and tested to 175 pounds cold water. Every heater is guaranteed to be absolutely tight, making it the only Feed Water Heater applicable to a Condensing Engine, increasing the vacuum and imparting a high degree of heat in the feed water, saving eight to ten per cent.

## THE BERRYMAN

has been in constant use for more than 12 years in all parts of the United States and Europe, and none have ever needed repairs. It gives the highest result attainable by the use of exhaust steam.

Boiler repairs, and the vexation by shutting down when in a hurry, are saved. The trouble and expense of throwing out a poor heater and putting in a good one are saved by the use of THE BERRYMAN FEED WATER HEATER AND PURIFIER.

All Oil or Fatty Matter is excluded from the boilers, as the feed water and exhaust steam do not come in contact by the use of THE BERRYMAN FEED WATER HEATER AND PURIFIER.

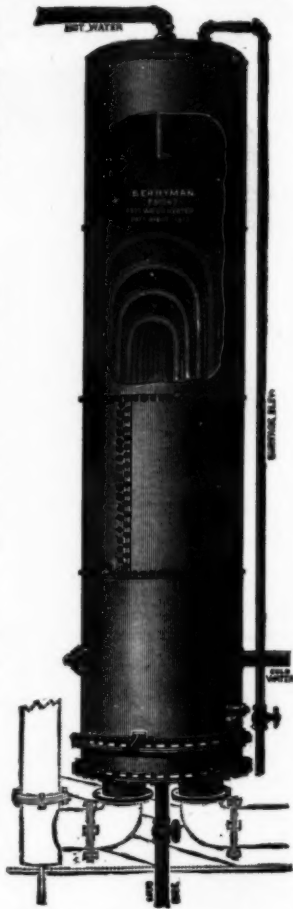
**I. B. DAVIS & SON,**

Sole Proprietors & Manufacturers in the U. S.

Office & Works, HARTFORD, CONN.

Philadelphia Office, 125 North 4th St., JAS. BERRYMAN, Manager.

R. M. DeARZARENA, Agent, No. 811 North Second St., ST. LOUIS, MO.



# Queen City Printing Ink Co.

CINCINNATI, OHIO.

WITH WHICH THIS PAPER IS PRINTED  
IS MADE BY THE  
**THE INK** QUEEN CITY PRINTING INK CO.  
CINCINNATI, O.

MANUFACTURERS OF ALL DESCRIPTIONS OF

# INKS!

→ Varnishes and Sizes ←

FOR PRINTERS' USE.

New York Office, . . . 194 William Street.

Philadelphia Office, . . . 434 Walnut Street.

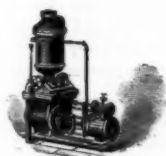
# KNOWLES STEAM PUMP WORKS,

BUILDERS OF

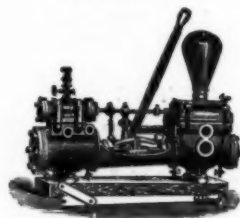
## Single and Duplex Steam and Power Pumping Machinery

44 WASHINGTON ST.  
BOSTON.

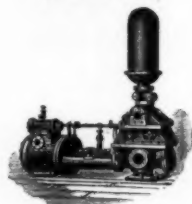
93 LIBERTY ST.  
NEW YORK.



PUMP AND CONDENSER.

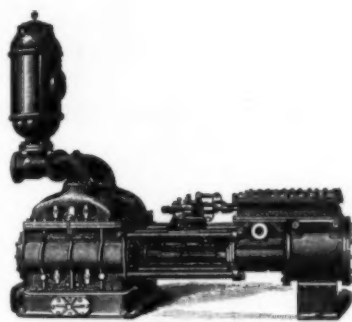


PRESSURE PUMP.

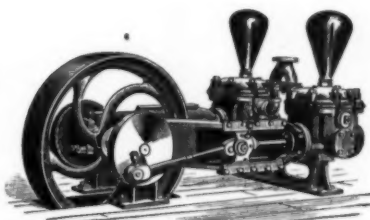


FIRE PUMP.

SEND FOR  
ILLUSTRATED  
CATALOGUE,  
WITH  
Price-Lists.



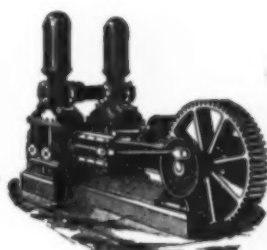
COMPOUND PUMPING ENGINE.



DUPLEX BELT PUMP.



BOILER FEED PUMP.



GEARED POWER PUMP.



AIR COMPRESSOR.

ESTIMATES  
FURNISHED  
—ON—  
APPLICATION.  
CORRESPONDENCE  
SOLICITED.

## BARNEY & KILBY, SANDUSKY, OHIO.

BUILDERS OF THE NEUERT PATENT

### Automatic Cut-off and Adjustable Cut-off ENGINES.

MILL BUILDERS and FURNISHERS.

REFERENCES:

Cleveland, Ohio, May 5, 1885.

GENTLEMEN—The new Automatic Engine we purchased of you gives entire satisfaction, and so far has given every result claimed for it. Our engineer, a practical mechanic, thinks it is the best engine he ever saw. Yours respectfully,

COCHRAN &amp; LANE.

Bellefontaine, Ohio, Nov. 13, 1884.

GENTLEMEN—In reply to yours of the 8th, we take pleasure in saying that since you overhauled and programmed our mill and put in the Stevens Rolls, we have had what we never before had, i. e. a mill that is entirely satisfactory in the matter of separations and quality of work done. We have also been able to turn out more flour than we expected, having for the past month made an average of 360 bbls. per day. Our millers are as highly pleased as we are, and say it is not half the trouble to keep the grades uniform as it was heretofore. Wishing you continued prosperity, we are, Yours truly,

COLTON BROS.

E. C. HUXLEY, Pres.

T. L. STURTEVANT, Treas.

## THE STURTEVANT MILL.

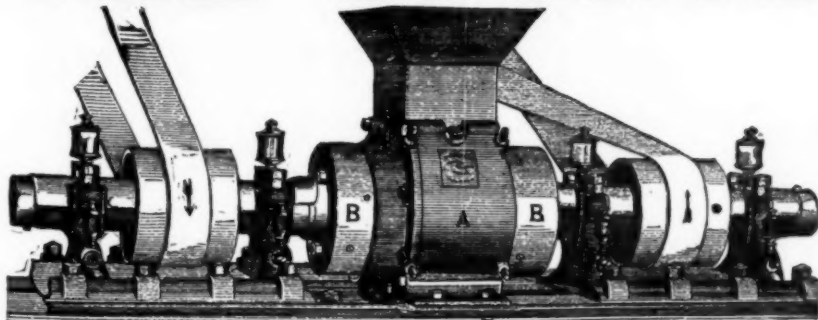
ROCK CRUSHER

—AND—

### PULVERIZER COMBINED.

FOR GRINDING AND CRUSHING

Ores, Phosphates, and Other Hard Substances.



of this invention, as it is the first mill ever constructed where the rock is made to grind itself. The expense of wear and tear is 75 per cent. less than any machine ever invented. No expensive foundations. No skilled labor required. One mill equal to a 30-stamp battery and crushers combined, occupies space of 12 feet by 4 feet in width. These machines are in operation on a large scale. Every mill warranted to do all claimed for it. Send for catalogues of this wonderful machine and full information.

FRASER &amp; CHALMERS, Sole Manufacturers,

45 Fulton Street, Chicago.

2 Wall Street, New York.

11 Calle de Juarez, Chihuahua, Mexico.

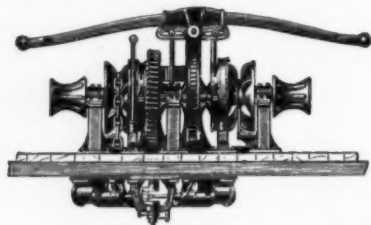
423 Blake Street, Denver

STURTEVANT MILL CO., 89 MASON BUILDING, BOSTON, MASS.



# American Ship Windlass Co.

ESTABLISHED 1857.



The "Providence" Patent Steam Pump Brake Yacht Windlass.

— BUILDERS OF THE CELEBRATED —

## "Providence" Windlasses & Capstans

For Yachts, Tug Boats, Barges,

SAILING VESSELS and STEAMSHIPS.

Also, Wharf Drops, Ferry Drops, &c.

Can refer to every Steamship Line in the country. Address

FRANK S. MANTON, Agt.

P. O. BOX 53. PROVIDENCE, R. I.

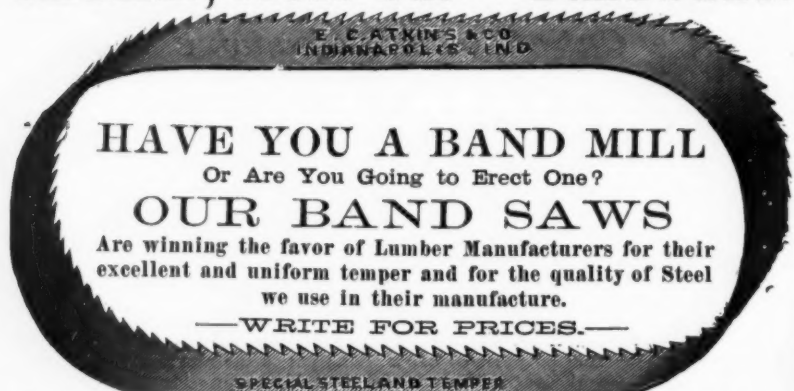
# E. C. ATKINS & CO.

INDIANAPOLIS, IND.

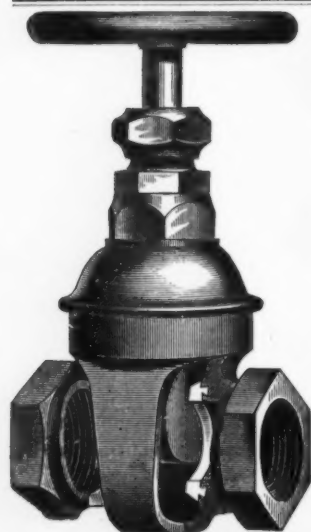
MANUFACTURERS OF

MEMPHIS, TENN.

## Circular, Cross-Cut AND Band Saws.



Use only the best Cross-Cuts. Our Cross-Cuts are acknowledged as incomparably the best in use. We are agents for Tanite Emery Wheels and Grinding Machinery.



## Chapman Valve Mfg. Co.

MANUFACTURERS OF

STEAM, GAS AND WATER

## Valves and Gates.

Fire Hydrants

With or Without INDEPENDENT VALVES.

General Office and Works,

INDIAN ORCHARD, MASS.

Treasurer's Office,

Mason Building, 72 Kilbo and 112 Milk Sts., Boston.

ALL WORK GUARANTEED.

Send for Descriptive Circulars and Price-List. Correspondence solicited.

# THOMAS K. CAREY & CO.

25 S. Charles Street, BALTIMORE, MD.

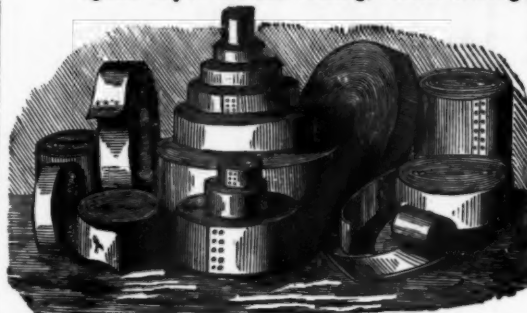
Manufacturers

## Pure Oak Tanned Leather Belting

Agents Hoyt's Leather Belting, Boston Belting Co's Rubber Belting.

DEALERS IN

Lace, Picker and Belt Leather, Roller Skins, Roller, Clearer and Slasher, Cloths, Ring Travelers, Bobbins, Shuttles, Cotton Belt, Elevator Buckets, Spiral Conveyers, and Mill Goods of all kinds.—Rubber Hose, Gaskets, Valves, Deckle Straps, Pure Gum, Cloth Insertion, and Rubber-Back Packing, Tubing, Cotton and Linen Hose, Springs, and Mechanical Rubber Goods of every Description.



"The United States desires only the best class of materials, and parties who imagine that any other class will be received are respectfully requested not to bid."

## The Gilbertson's Old Method Roofing Plate

Selected as the

BEST MATERIAL FOR THE ROOF OF THE

## WHITE HOUSE IN WASHINGTON.

The "GILBERTSON'S OLD METHOD" takes the contract for the WHITE HOUSE roof at 70 cents per box over the "Genuine Old Style" for the 10 1/2 x 20 size (equal to \$1.40 per box for the 20 x 28 size).

MERCHANT & CO.

PHILADELPHIA.

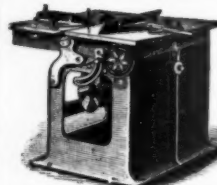
NEW YORK.

CHICAGO.

THE BEST AND MOST COMPLETE

## Universal Saw Bench

IN THE WORLD.



Does every class and combination of work that CAN be done by a circular Saw, and Buzz Planer without calculation.

INDISPENSABLE

to PATTERN and CABINET MAKERS, SASH and BLIND, and all WOOD-WORKING ESTABLISHMENTS.

SAVES TIME, LABOR and EXPENSE.

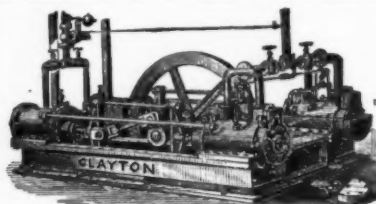
MANUFACTURED BY

HERBERT BAKER, Toledo, Ohio.

MANUFACTURER OF EVERY VARIETY OF WOOD WORKING MACHINERY.

CORRESPONDENCE SOLICITED.

MENTION THIS PAPER.



"CLAYTON"

## AIR COMPRESSORS.

Rock Drills, Mining Pumps, General Mining Machinery. For Catalogues, Estimates, Etc., address

CLAYTON AIR COMPRESSOR WORKS,

Office, 43 Dey Street, NEW YORK.

## Buffalo Shaving and Ventilating

## EXHAUST \* FANS.

SATISFACTION GUARANTEED In \* Every \* Instance.

SEND FOR CATALOGUE AND

—PRICE-LIST.—

Buffalo Forge Co.



490 \* BROADWAY, \* BUFFALO, \* N. \* Y.